BRITISH MARINE ALGÆ

E. A. L. BATTERS

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A CATALOGUE

OF

THE BRITISH MARINE ALGÆ

BEING

A LIST OF ALL THE SPECIES OF SEAWEEDS KNOWN TO OCCUR ON THE SHORES OF THE BRITISH ISLANDS, WITH THE LOCALITIES WHERE THEY ARE FOUND.

BY

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More than ten years have now elapsed since the appearance of the "Revised List" by Mr. Holmes and myself, which still remains the most recent catalogue of the British Marine Algæ. In the meantime many additions have been made to our Marine Flora, and very numerous changes both in nomenclature and classification have been rendered necessary by our increased knowledge of the subject. I hope, therefore, that a catalogue incorporating all the more recent alterations may not prove wholly unacceptable to algologists.

I have attempted to roughly indicate the distribution of the species on the British coasts, and with that object in view I have examined many important collections, both public and private, more especially those of Buddle, Petiver, Uvedale, Ed. Forster, Rev. Hugh Davies, the remnants of Hudson's herbarium, and the general British Collection in the British Museum; those of Bishop Goodenough, Dawson Turner, Sir W. Hooker, Capt. Carmichael, and others at Kew; those of Stackhouse, Mrs. Griffiths, Dr. Cocks, and a duplicate set of Prof. W. H. Harvey's British Marine Algæ in the possession of the Linnean Society; the five fasciculi of Mrs. Wyatt's "Algæ Danmonienses," the ten of Mr. Holmes's valuable "Algæ Britannicæ Rariores Exsiccatæ," and many private collections, in addition to those mentioned in the introduction to the "Revised List" by Mr. Holmes and myself, the Pollexfen herbarium, and the beautiful series of microscopic preparations of British Marine Algæ made by the late Mr. T. H. Buffham, now forming part of my own extensive collection. I have also consulted the earlier works dealing with the subject, many local Floras, and the periodical literature up to the end of the year 1900. I am also much indebted to Mr. E. M. Holmes for much valuable information on this subject, and for allowing me to inspect many valuable specimens from his unrivalled collection of our native seaweeds. The data, however, are still so few, that only a very imperfect survey can be made; many species being, undoubtedly, much more widely distributed on our coasts than would appear to be the case from an

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inspection of the list of their recorded stations. This is especially the case with the *Myxophyceæ*, the microscopic species, and those which were formerly regarded as merely varieties of some other species.

With regard to the nomenclature, I have tried to bring it more into accord with that adopted by all algologists on the Continent of Europe and in the United States of America. I have introduced very few changes on my own authority, and only those absolutely demanded by the rules as to priority of publication. It may not be out of place to call attention here to the careless way in which the earlier authors quoted the works of their predecessors; Goodenough and Woodward, Turner and Stackhouse, for instance, refer to the second edition of Hudson's *Flora Anglica* as if it were a reprint of the one issued in 1762, which is very far from being the case, many species making their first appearance in the edition of 1778; again, they refer constantly to Withering's *Botanical Arrangement*, without stating to which of the three editions of that work, which had then appeared, they refer; on the other hand, Stackhouse's *Nereis* is treated as if none of it had appeared before 1801 (the date of the completed work), whereas in reality it was published in three parts, which were respectively issued in 1795, 1797, and 1801. Similar instances might be given to almost any extent. Later authors followed the lead of the earlier ones, and now, when date of publication is of such importance in matters of nomenclature, the practice has given rise to much confusion.

Order MYXOPHYCEÆ Stizenb.

Family I. Coccogoneæ Thur.

Tribe I. Chroococcaceæ Rabenh.

Gen. 1. Chroococcus Näg.

C. turgidus Näg. Norfolk coast (Yarmouth). Probably common.

Gen. 2. Aphanocapsa Näg.

A. marina Hansg. Coasts of Northumberland (Berwick), Dorset (Swanage), and Essex (Clacton). Probably common.

Gen. 3. Gloeocapsa Näg.

G. crepidinum Thur. Coasts of Yorkshire (Scarborough), Northumberland (Berwick), Essex (Southend, Clacton), Sussex (Bognor, Worthing), and Dorset (Weymouth); Wales (Point of Ayr); Scotland (S. Connel, Argyleshire). Probably common.

Gen. 4. Oncobyrsa Ag.

O. marina Rabenh. Coast of Dorset (Swanage). Rare.

Gen. 5. Anacystis Menegh.

A. parasitica Kütz. (= *Polycystis pallida* Holm. & Batt. Rev. List). Coasts of Northumberland (Berwick), Dorset (Weymouth), and Devon (Sidmouth). Probably common.

Gen. 6. Aphanothece Näg.

A. pallida Rebenh. Dorset coast (Weymouth). Probably common.

Gen. 7. Merismopedia Meyen.

M. glauca Kütz. S.W. Scotland (Cumbrae). Probably common.

Tribe II. Chamæsiphonaceæ Borzi.

Gen. 8. Dermocarpa Crn.

D. Schousbœi Born. Coasts of Northumberland (Berwick), Yorkshire (Scarborough), Norfolk (Yarmouth), and Somerset (Minehead); N. Wales (Puffin I.; Hilbre I.); S.W. Scotland (Cumbrae; S. Connel, Argyleshire). Not uncommon.

D. Leibleiniæ Born. Devonshire coast (Teignmouth); S.W. Scotland (Cumbrae); Channel Islands (Jersey). Rare.

D. violacea Crn. Coasts of Northumberland (Berwick) and Kent (Deal); S. Scotland (Cumbrae, Oban, Dunbar). Rather rare.

D. prasina Bornet. Coast of England and S. Scotland; Channel Islands. Common.—*β olivacea* Holm. & Batt. S. England.

D. rosea Batt. Coast of Northumberland (Berwick); S.E. Scotland (Dunbar). Rare.

D. incrustans Batt. Northumberland coast (Berwick); Sussex (Hastings); S.E. Scotland (Arbroath). Not uncommon.

Gen. 9. Pleurocapsa Thur.

P. fuliginosa Hauck. Coasts of Northumberland (Berwick) and Dorset (Weymouth). Rare.

P. amethystea Rosenv. Coast of Wales (Puffin Island); Channel Islands (Guernsey). Rare.

Gen. 10. Entophysalis Kütz.

E. granulosa Kütz. Coast of Sussex (Worthing). Rare.

Gen. 11. Hyella Bornet & Flah.

H. cæspitosa Born. & Flah. Coasts of Essex (Clacton, Leigh), Dorset (Weymouth), and Devon (Teignmouth, Plymouth); Wales (Hilbre Island); S.W. Scotland (Cumbrae, Gare Loch, &c.); Ireland (Belfast Lough); Channel Islands (Guernsey). Common.—*β nitida* Batt. (= *H. voluticola* Chodat). Dredged in Plymouth Sound. Coast of Wales. Rare.

Gen. 12. Chamæsiphon A. Br.

C. marinus Wille. Coast of Dorset (Swanage). Probably common.

Family II. Hormogoneæ Thur.

Subfam. Homocysteæ Born. & Flah.

Tribe I. Lyngbyeæ Gom.

Subtribe Spirulinoideæ Gom.

Gen. 13. Spirulina Turpin.

S. major Kütz. (= *S. pseudotenuissima* Batt. Alg. Berw. pl. vii. f. 4, et *S. Hutchinsiæ* Harv., non Kütz.). Coasts of Northumberland (Berwick) and Wales (Point of Ayr); S.W. Scotland (Cumbrae). Rare.

S. versicolor Cohn. *β laxa* Gom. Coast of Devonshire (Plymouth). Rare.

S. subsalsa Œrsted (= *S. tenuissima* Kütz.). Coasts of England, Wales, and S. Scotland. Not uncommon.—*β oceanica* Gom. (= *S. oceanica* Crn.). Coasts of Dorset (Weymouth) and Norfolk (Cley). Rare.

Subtribe II. Oscillarioideæ Gom.

Gen. 14. Oscillatoria Vaucher.

O. Bonnemaisonii Crn. (= *Oscillaria Colubrina* Thur. et *O. intermedia* Crn.). S.E. Scotland (near Berwick). Rare.

O. margaritifera Kütz. (= *O. insignis* Thw.). Shirehampton, near Bristol, Saltash, and Cumbrae. Probably not uncommon.

O. nigroviridis Thw. Shirehampton, Cumbrae, and Berwick. Probably not uncommon.

O. Corallinæ Gom. (= *O. littoralis* Carm.; *O. capucina* Holm. Fasc. no. 69; and *Lyngbya gracilis* Batt. in Grevillea, Dec. 1893, non Rabenh.). Coasts of Dorset (Weymouth) and Essex (Harwich); S.W. Scotland (Appin); Channel Islands (Guernsey). Common.

O. amphibia Ag. (= *O. infectoria* Tassi). Coast of Northumberland (Berwick). Rare.

O. subuliformis Thw. Shirehampton; coasts of Northumberland (Berwick) and S.W. Scotland (Cumbrae). Rare.

O. lætevirens Crn. Coast of Northumberland (Berwick).

O. formosa Bory (= *O. tenuis* Holm. & Batt. Rev. List). Only recorded from the Northumberland coast (Berwick).

O. brevis Kütz. *β neapolitana* Gom. S.W. Scotland (Cumbrae). Rare.

O. rosea Batt. (*Oscillaria rosea* Crn.). Coast of Devon (Plymouth). Dredged. Rare.

Gen. 15. Phormidium Kütz.

P. fragile Gom. Coasts of Wales (Point of Ayr) and Northumberland (Holy Island). Rare.

P. tenue Gom. Northumberland coast (Berwick); Wales (Point of Ayr). Rare.

P. corium Gom. Coasts of Essex (Burnham) and Dorset (Swanage). Not uncommon.

P. papyraceum Gom. (= *Oscillatoria spiralis* Carm.). S.W. coast of Scotland (Appin, Cumbrae); Sussex (Brighton); Cornwall (Penzance, Saltash, &c.); N. Wales (Anglesea, Point of Ayr). Not uncommon.

P. ambiguum Gom. S.W. coast of Scotland (Cumbrae).

P. uncinatum Gom. Northumberland coast (Berwick).

P. autumnale Gom. (= *P. antliarum* Gom. in Holm. & Batt. Rev. List). Coasts of Northumberland (Berwick), Cornwall (Padstow, Falmouth), and Dorset (Weymouth). Not uncommon.

P. Ectocarpi Gom. (= *P. persicinum* Batt., non Gom.). S.W. Scotland (Cumbrae) and Devonshire (Plymouth). Rare.

Gen. 16. Lyngbya Ag.

Subgenus Leibleinia Gom.

L. Agardhii Gom. Coasts of Kent (Margate) and Devon (Plymouth). Rare.

L. Meneghiniana Gom. S. Scotland (Caroline Park, near Edinburgh; Cumbrae).

Subgenus Eulyngbya Gom.

L. æstuarii Liebm. f. *ferruginea* Gom. (= *L. ferruginea* Ag. et *L. luteofusca* Holmes in Grevillea, 1882, non Kütz.). Coasts of Dorset (Swanage, Poole), Sussex (Worthing), and Northumberland (Berwick); Scotland (Appin, Cumbrae, Aberdeen, Earlsferry, Fifeshire). Not uncommon.—f. *limicola* Gom. Coast of Wales (Point of Ayr, Flintshire). — f. *natans* Gom. Point of Ayr, Flintshire.— f. *symplocoidea* Gom. Point of Ayr, Flintshire. —f. *æruginea* Gom. Point of Ayr, Flintshire.—f. *spectabilis* Gom. (= *L. spectabilis* Thur.). Point of Ayr, Flintshire.

L. majuscula Harv. Coasts of Devon (Torquay, Sidmouth, Ilfracombe, Plymouth), Cornwall (Mounts Bay, Mount Edgcumbe), Dorset (Weymouth), and Northumberland (Holy Island); Scotland (Hunterston, Girvan, Orkney Islands); Ireland (Belfast, Bantry, Portrush); Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.—f. *crispa* Holm. & Batt. With the type.

L. semiplena J. Ag. (= *L. confervoides* Batt. in Grevillea, non Ag.). Coasts of Norfolk (Yarmouth), Essex (Southend), and Dorset (Weymouth, Swanage); N. Wales (Point of Ayr); Channel Islands (Guernsey). Not uncommon.

L. lutea Gom. Coast of Wales (Puffin Island); Scotland (Cumbrae). Rare.

L. Rivulariarum Gom. (within the sheaths of *Microcoleus chthonoplastes*). Dorset coast (Swanage, Studland); Scotland (Cumbrae). Rare.

Gen. 17. Symploca Kütz.

S. hydnoides Kütz. *α genuina* Gom. (= *Calothrix semiplena* Harv. et *S. Harveyi* Le Jol.). Coasts of Devon (Sidmouth, Torquay), Cornwall (Mousehole, Fowey), Dorset (Weymouth, Swanage), and Suffolk (Felixstowe); N. Wales (Puffin Island); Scotland (Dunbar, Earlsferry, Kingcraig, Arran); Ireland (Kilkee); Channel Islands (Guernsey). —f. *fasciculata* Gom. (= *S. fasciculata* Kütz.). Dorset coast (Weymouth); Northumberland (Berwick); Scotland (Cumbrae). Not uncommon.

S. atlantica Gom. Coast of Wales (Ferryside, Carmarthen); Dorset (Studland). Rare. — *β purpurea* Batt. Devon (Mouth of the Yealm).

Gen. 18. Plectonema Thur.

P. Nostocorum Born. (within the sheaths of *Rivularia bullata*, *Schizothrix vaginata*, and *Dichothrix gypsophila*). Coasts of Devonshire (Torquay, Sidmouth) and Dorset (Weymouth, Chapman's Pool); Scotland (Cumbrae). Rare.

P. terebrans Born. & Flah. (within the chalky shells of several species of molluscs). Coasts of Dorset (Weymouth, Swanage), Devonshire (Plymouth, mouth of the Yealm), and Northumberland (Berwick); Scotland (Cumbrae); Ireland (Belfast Lough). Not uncommon.

P. Battersii Gom. Northumberland coast (Berwick). Probably not uncommon.

P. norvegicum Gom. Coasts of Essex (Clacton) and Dorset (Swanage). Probably not uncommon.

Tribe II. Vaginarieæ Gom.

Gen. 19. Microcoleus Desmaz.

M. chthonoplastes Thur. (= *M. anguiformis*). Coasts of Wales (Dolgelly, Point of Ayr), Devon (Sidmouth), Cornwall (Looe), Dorset (Studland), and Northumberland (Berwick, Holy Island); Scotland (Firth of Clyde in several places, Montrose, Dunbar). Not uncommon.

M. tenerrimus Gom. Coast of Devon (Torquay).

Gen. 20. Hydrocoleum Kütz.

H. lyngbyaceum Kütz. *α genuina* Gom. Coasts of Northumberland (Berwick), Dorset (Weymouth), and Devon (Sidmouth). Rare. —*β rupestre* Kütz. (*Microcoleus nigrescens* Thur.). Coasts of Northumberland (Berwick) and Kent (Folkestone). Rare.

H. glutinosum Gom. (= *Oscillaria percursa β marina* Kütz.). Coast of Northumberland (Berwick). Rare.

Gen. 21. Schizothrix Kütz.

S. Cresswellii Harv. Coast of Devon (Sidmouth). Very rare.

S. lardacea Gom. Coast of Devon (Paignton). Rare.

S. vaginata Gom. Coast of Devon (Sidmouth); Scotland (Cumbrae).

Subfamily II. Heterocysteæ Hansg.

Tribe 1. Rivulariaceæ Rabenh.

Subtribe Leptochæteæ Borzi.

Gen. 22. Amphithrix.

A. violacea Born. & Flah. Coast of Scotland (*fide* Rabenhorst).

Subtribe Mastichotricheæ Kütz.

Gen. 23. Calothrix Ag.

C. confervicola Ag. Common on the shores of England, Wales, and S. Scotland; Ireland; Channel Islands.—*β purpurea* Born. & Flah. Coasts of Norfolk (Yarmouth) and Sussex (Bognor). Rare. —*γ Zostericola* Crn. Coast of Dorset (Weymouth, Swanage).

C. consociata Born. & Flah. Coast of Norfolk (Cley). Rare.

C. scopulorum Ag. Not uncommon on the coasts of England, Scotland, and Ireland; Channel Islands (Guernsey).

C. Contarenii Born. & Flah. Coast of Dorset (Weymouth). Rare.

C. pulvinata Ag. (= *C. hydnoides* Harv., *C. pannosa* Harv., and *C. cæspitula* Harv.). Not uncommon on the shores of England, Scotland, Ireland, and the Channel Islands.

C. parasitica Thur. Coasts of Dorset (Portland, Swanage) and Cornwall (Porth Cressa, Scilly). Rare.

C. æruginea Thur. Coasts of Devon (Tor Abbey, Sidmouth), Cornwall (Padstow), Dorset (Swanage), and Northumberland (Berwick); Scotland (Earlsferry, Fife). Rare.

C. crustacea Thur. Coasts of Devon (Salcombe, Sidmouth, Torquay), Dorset (Swanage), and Northumberland (Berwick). Not uncommon.

C. fasciculata Ag. Coasts of Dorset (Swanage) and Northumberland (Berwick, Holy Island); Scotland (Cumbrae, Lismore, Elie, Fife); Ireland (Miltown Malbay).

C. vivipara Harv. *Nereis Boreali-Americana*, iii. p. 106 (1858). Arbroath, May, 1893; J. Jack.

Gen. 24. Dichothrix Zan.

D. gypsophila Born. & Flah. in Ann. Sc. Nat. vii. sér. Bot. vol. iii. p. 377. On rocks near high-water mark. Weymouth, Aug. 1900; and Sidmouth, Aug. 1901; E. A. B.

Subtribe Rivulariaceæ Kütz.

Gen. 25. Isactis Thur.

I. plana Thur. (= *Rivularia plana* Harv.). Coasts of Devonshire (Sidmouth), Hants (Ventnor, I. W.), Sussex (Bognor), Essex (Blackwater), Dorset (Swanage, Weymouth), and Northumberland (Berwick). Not uncommon. — *β fissurata* Born. & Flah. Coast of Northumberland (Berwick).

Gen. 26. Rivularia Ag.

R. Biasolettiana Menegh. (= *Schizosiphon Warreniæ* Casp.). Coasts of Devon (Sidmouth, Plymouth), Cornwall (Falmouth, Penzance, Wadebridge), Yorkshire (Scarborough), Northumberland (Berwick), and Dorset (Weymouth); N. Wales (Hilbre I., Point of Ayr); Scotland (Cumbrae); Ireland (Torr Head, Antrim). Not uncommon.

R. atra Roth. Common on the shores of England, Scotland, Ireland, and the Channel Islands. — *β hemisphærica* Born. & Flah. With the type. — *γ confluens* Farlow. Coasts of Devon (Sidmouth) and Northumberland (Berwick). Rather rare.

R. nitida Ag. (= *R. plicata* Carm.). Coasts of Devon (Torbay) and Cornwall (Mounts Bay, Saltash, Trevone); Scotland (Appin, Ballantrae, Eyemouth); Ireland (Innischerig Island, Malby). Not uncommon.

R. bullata Berk. (= *R. nitida* Desmaz.). Coasts of Devon (Torquay, &c.) and Cornwall (Looe, Fowey, St. Minver, Mounts Bay); Ireland, South and West; Channel Islands (Guernsey). Rare.

R. mesenterica Thur. (= *R. polyotis* Holm. & Batt. Rev. List, non Born. & Flah.). Coast of Devon (Torquay). Rare.

R. australis Harv. Coast of Devon (Torquay). Rare.

Gen. 27. Brachytrichia Zan.

B. Balani Born. & Flah. Coasts of Dorset (Bournemouth, Swanage) and Devon (Sidmouth). Very rare.

Tribe II. Sirosiphoniaceæ Rabenh.

Gen. 28. Mastigocoleus Lagerh.

M. testarum Lagerh. Not uncommon on the shores of England and S. Scotland; Ireland (Belfast Lough); Channel Islands (Guernsey).

Tribe III. Scytonemaceæ Rabenh.

Gen. 29. Microchæte Thur.

M. grisea Thur. Coasts of Dorset (Weymouth) and Northumberland (Berwick). Rare.

M. æruginea Batt. Coast of Northumberland (Berwick).

Tribe IV. Nostoceæ Kütz.

Gen. 30. Nostoc Vaucher.

N. entophytum Born. & Flah. S.W. Scotland (Cumbrae). Rare.

N. Linckia Born. (= *Monormia intricata* Berk.). Coasts of Gloucester (Shirehampton, near Bristol), Kent (Gravesend), and Norfolk (Brancaster); S.W. Scotland (Cumbrae). Rare.

Gen. 31. Anabæna Bory.

A. variabilis Kütz. (= *Sphærozyga Thwaitesii* Harv.). Coasts of Gloucester (Shirehampton, near Bristol), Somerset (Porbury), Cornwall (Penzance), and Essex (Harwich); Wales (Dolgelly); S.W. Scotland (Cumbrae). Probably not uncommon.

A. torulosa Lagerh. (= *Sphærozyga Carmichaelii* Harv.). Coasts of Gloucester (Shirehampton, near Bristol), Sussex (Brighton), Norfolk (Cley), and Northumberland (Berwick); Wales (Menai Straits, Barmouth, Point of Ayr, Anglesea, Dolgelly); S.W. Scotland (Appin). Not uncommon.

Species inquirendæ.

A. Broomei Batt. (= *S. Broomei* Thw.). Coast of Gloucester (Shirehampton, near Bristol).

A. Berkeleyana Batt. (= *S. Berkeleyana* Thw.). Coast of Gloucester (Shirehampton).

Gen. 32. Nodularia Mert.

N. Harveyana Thur. (= *Spermosira Harveyana* Thw.). Coasts of Gloucester (Shirehampton) and Northumberland (Berwick); Wales (Point of Ayr). Rare.

N. spumigena Mert. *β litorea* Born. & Flah. (= *Spermosira litorea* Kütz.). Coast of Gloucester (Shirehampton); Wales (Barmouth, Dolgelly); S.W. Scotland (Cumbrae). Rare.

Order CHLOROSPERMEÆ Harv.

Suborder Protococcinæ Holm. & Batt.

Fam. Protococcaceæ Menegh.

Gen. 33. Chlorochytrium Cohn.

C. immersum Massee. Coast of Yorkshire (Scarborough).

C. inclusum Kjellm. Coasts of England, Wales, and S. Scotland. Common.

C. Cohnii Wright (= *Chlorocystis Cohnii* Rke.). Ireland (Howth, near Dublin); Essex (Harwich); Dorset (Swanage); Devon (Teignmouth); Wales (Bangor). Not uncommon.

C. dermatocolax Rke. Coast of Northumberland (Berwick); Wales (Bangor); S.W. Scotland (Cumbrae). Rare.

Gen. 34. Protococcus Rab.

P. marinus Kütz. Coast of Dorset (Weymouth, Swanage). Rare.

Fam. Palmellaceæ Näg.

Gen. 35. Glœocystis Näg.

G. adnata Näg. Coasts of Kent (Dover), Devon (Ilfracombe and Sidmouth), and Northumberland (Berwick). Rare.

Fam. Halosphæreæ Schm.

Gen. 36. Halosphæra Schm.

H. viridis Schm. Coast of Devon (Plymouth). Probably not uncommon.

Fam. Characiaceæ Wittr.

Gen. 37. Sykidion Wright.

S. Dyeri Wright. Coast of Ireland (Howth, near Dublin); Wales (Point of Ayr). Rare.

Gen. 38. Characium A. Br.

C. marinum Kjellm. (= *C. strictum* Holm. & Batt., non A. Br.). Coast of Northumberland (Berwick); S.W. Scotland (Cumbrae). Probably not uncommon.

Gen. 39. Codiolum A. Br.

C. gregarium A. Br. Coast of Devon (Axmouth). Rare.

C. pusillum Foslie (= *C. gregarium* Holm. Fasc. no. 60, non A. Br.; and *C. longipes* Holm. Fasc. no. 38, non Foslie). Coasts of Devon (Teignmouth and Lynmouth) and Northumberland (Spittal, near Berwick); Orkney Islands (N. Ronaldshay). Rare.

C. Petrocelidis Kuck. Coast of Northumberland (Berwick); Firth of Clyde, &c. Not uncommon.

Alga incertæ sedis.

Gen. 40. Prasinocladus Kuck.

P. lubricus Kuck. Coast of Devon (Plymouth).

Suborder Confervoideæ Ag.

Fam. Blastosporeæ Jessen.

Gen. 41. Prasiola Ag.

P. stipitata Suhr (= *P. marina* Crn. in Holm. Fasc. no. 21). Coasts of Northumberland (Berwick), Norfolk (Yarmouth), and Devon (Torquay, Teignmouth); S. Scotland (Dunoon, Cumbrae, Joppa near Edinburgh, Dunbar); Ireland. Not uncommon.

Gen. 42. Gayella Rosenv.

G. polyrhiza Rosenv. (= *Schizogonium disciferum* Holm. & Batt.). Coast of Northumberland (Berwick). Rare.

Fam. Ulvaceæ Rke.

Gen. 43. Pringsheimia Rke.

P. scutata Rke. Coasts of Northumberland (Berwick), Kent (Margate), and Dorset (Swanage); S.W. Scotland (Cumbrae, Ardrossan); Ireland (Belfast Lough). Rare.

Gen. 44. Protoderma Kütz.

P. marinum Rke. S.W. Scotland (Cumbrae). Rare.

Gen. 45. Ulvella Crn.

U. lens Crn. Coast of Devon (dredged in Plymouth Sound). Rare.

U. fucicola Rosenv. (= *U. lens* Batt. pro parte, non Crn.). Coasts of Northumberland (Berwick) and Cheshire (Heswall). Not uncommon. — *β globosa* Batt. Coast of Northumberland (Berwick). Rare.

U. confluens Rosenv. Coast of Dorset (Weymouth). Probably not uncommon.

Gen. 46. Monostroma Thur.

α Eumonostroma.

M. Wittrockii Born. Coast of Devonshire (Fowey River, Saltash, Plymouth); S. Scotland (Tayport). Rare.

M. latissimum Wittr. Coasts of Devon (Otterton) and Dorset (Portland). Rare.

M. laceratum Thur. Coasts of Cornwall (Lostwithiel, near Wadebridge), Dorset (Portland), and Essex (Maldon). Rare.

M. quaternarium Desmaz. Pl. Crypt. Franc. (nouv. sér.), no. 603. Coasts of Dorset (Poole Harbour, April, 1889; Weymouth, April, 1890) and Sussex (Pagham, April, 1892; E. M. Holmes).

M. orbiculatum Thur. "Sur quelques algues nouvelles" in Mém. Soc. Nat. Cherb. vol. ii. p. 388. Coasts of Cornwall (Falmouth, June, 1884; F. W. Smith) and Dorset (Weymouth, April, 1882; E. A. B.).

M. undulatum Wittr. Monostr. p. 46, tab. iii. fig. 9. Orkney Islands (Ronsay; Mrs. Traill, about 1837, in herb. J. H. Pollexfen).

M. crepidinum Farlow, Mar. Alg. New Engl. p. 42. Coasts of Cornwall (Falmouth, April, 1882, R. V. Tellam; and May, 1897, E. George) and Sussex (Pagham, April, 1892; E. M. Holmes). Rare.

β Ulvaria Rupr.

M. fuscum Wittr. emend. Rosenv. *α genuina* Batt. Coasts of Northumberland (Berwick) and Yorkshire (Scarborough); Scotland (Cumbrae, Orkney Islands, Skaill). Not uncommon. — *β Blyttii* Batt. (= *M. Blytii* Wittr.). Coasts of Northumberland (Berwick) and Kent (Dover); Scotland (Tayport, Cumbrae). Not uncommon.

M. Grevillei Wittr. emend. Rosenv. *α typica* Rosenv. (= *Ulva lactuca* Grev.). Coasts of Devon (Plymouth, &c.), Cornwall (Falmouth), Dorset (Weymouth), Hants (Isle of Wight), and Northumberland (Holy Island, Berwick); S. Scotland (Bute, Firth of

Forth); Ireland (Roundstone). Not common.— *β Vahlii* Rosenv. Grönl. Havalg. p. 949. Coast of Northumberland (Alnmouth, April, 1886, A. Amory; Holy Island, February, 1887, E. A. B.). Rare.— *γ arctica* Rosenv. *l. c.* Coast of Scotland (Cromarty, July, 1896, E. M. Holmes). Rare.— *δ lactuca* Hauck (= *M. lactuca* J. Ag.). South coast of England (Weymouth, Torquay, &c.). Rare. — *ε Cornucopiæ* Batt. (= *Enteromorpha Cornucopiæ* Carm.). Coasts of Devon (Torquay) and Northumberland (Berwick); Scotland (Appin, Orkney Islands). Rare.

Gen. 47. Capsosiphon Gobi.

C. aureolus Gobi. South Coast of Scotland (Tayport, Cumbrae). Rare.

Gen. 48. Percursaria Bory.

P. percursa Rosenv. (= *Enteromorpha percursa* Ag.). Coast of Sussex (Pevensey Marsh); Wales (Bangor, Point of Ayr); S. Scotland (Bute, Ardrossan, Appin, Joppa, Elie (Fifeshire), Orkney Islands, &c.); Ireland (Larne).

Gen. 49. Enteromorpha Link.

E. clathrata J. Ag. *α genuina* Batt. Not uncommon on the coasts of England, Scotland, and the Channel Islands. Ireland?— *β Linkiana* Batt. (= *E. Linkiana* Grev.). Coasts of Cornwall (Trevone, Fowey, Looe) and Devon (Torquay, Sidmouth); Scotland (Appin, Cumbrae). Rare. — *γ gracilis* (Le Jol.). Coasts of the Channel Islands (Guernsey). Rare.—*δ procera* Hauck. Coast of Devon (Torquay). — *ε prostrata* (Le Jol.). Coasts of Cornwall (Falmouth, Looe), Devon (Torquay), Essex (Maldon, Wivenhoe), Norfolk (Yarmouth), and Northumberland (Berwick); Scotland (Orkney Islands).

E. paradoxa Kütz. *α typica* Batt. (= *E. erecta* Harv. Phyc. Br. xliii. and *E. pulcherrima* Holm. & Batt. Rev. List). Coasts of Devon (Torquay) and Sussex (Brighton). Rare. — *β tenuissima* (Kütz.) (= *E. Hopkirkii* McCalla). Coasts of Cornwall (Looe), Devon (Torquay), Sussex (Bognor), Dorset (Weymouth), and Northumberland (Berwick); Scotland (Orkney Islands); Ireland (Carrickfergus). Not uncommon. — *γ erecta* Batt. (= *E. erecta* Hook.). Coasts of Cornwall (Falmouth, Fowey, Whitsand Bay), Devon (Torquay), Hants (Isle of Wight), and Northumberland (Berwick); Scotland (Bute, Cumbrae, Ardrossan, Appin, Firth of Forth, Orkney Islands); Ireland (Roundstone, Bantry, &c.). Not uncommon.

E. Ralfsii Harv. Coasts of Dorset (Studland and Weymouth), Devon (Sidmouth), and Northumberland (Holy Island); N. Wales (Bangor). Rare.

E. torta Reinb. (= *E. percursa* Harv. non alior.). Coasts of Cornwall (Wadebridge), Devon (Tor Abbey), Essex (Clacton), and Northumberland (Berwick); N. Wales (Point of Ayr); Scotland (Arran, Bute, Appin, &c.); Ireland (Clontarf, Larne, &c.); Channel Islands (Guernsey). Not uncommon.

E. marginata J. Ag. (= *E. canaliculata* Batt.). Coasts of Kent (Dover), Essex (Leigh, Clacton), and Northumberland (Berwick); Scotland (Bute, Cumbrae). Not uncommon.

E. prolifera J. Ag. (= *E. compressa* β *prolifera* Grev.). Coasts of Devon (Torquay), and Northumberland (Berwick); Scotland (Joppa, near Edinburgh). Not common. — β *tubulosa* Reinb. Devon (Torquay); Essex (Estuary of the Orwell).

E. crinita J. Ag. Coasts of Devon (Torquay) and Northumberland (Berwick); Scotland (Joppa, near Edinburgh). Rare.

E. lingulata J. Ag. Coast of Devon (Torquay); Scotland (Orkney Islands). Rare.

E. ramulosa Hook. α *robusta* Hauck. Coasts of Devon (Plymouth, &c.), Cornwall (St. Martin's, Scilly), and Northumberland (Berwick, Budle Bay, Holy Island); Ireland (Bantry); Channel Islands (Guernsey). Not uncommon.—β *tenuis* Hauck. Coast of Cornwall (Scilly Islands).

E. compressa Grev. Common on all the coasts of the British Islands. — α *constricta* J. Ag. South coast of England, not uncommon. — β *complanata* J. Ag. Coasts of Devon (Torquay, Sidmouth, &c.), Cornwall (Scilly Islands), and Northumberland (Alnmouth); Scotland (Orkney Islands).—γ *nana* J. Ag. Common everywhere.

E. Linza J. Ag. α *lanceolata* (Kütz.). Not uncommon on the coasts of the British Isles. — β *angusta* Kütz. S.W. coast of Scotland (Cumbrae). Rare.

E. intestinalis Link. Very common everywhere on the coasts of Britain and Ireland. — α *ventricosa* (Le Jol.). South coast of England (Torquay, Bembridge, Isle of Wight); Orkney Islands; Channel Islands (Guernsey, Alderney). Not uncommon. — β *flagelliformis* (Le Jol.). Orkney Islands (Pulroit, Kirkwall); south coast of England.—γ *bullosa* (Le Jol.). South coast of England; Orkney Islands. Not uncommon. — δ *Cornucopiæ* Kütz. (non *E. Cornucopiæ* Carm.). Not uncommon on the coasts of the north of England and Scotland. —ε *maxima* J. Ag. South coast of England (Weymouth, Poole, &c.) and Northumberland (Berwick). Probably common.

E. micrococca Kütz. β *tortuosa* J. Ag. Coasts of Kent (Sandgate) and Essex (Clacton); Scotland (Arran, Cumbrae, &c.). Rare.

E. minima Näg. Coasts of Norfolk (Yarmouth), Essex (Clacton), Devon (Sidmouth), and Northumberland (Berwick). Not uncommon.

E. usneoides J. Ag. Alg. Syst. iii. p. 157. South coast of England (W. Cowes, Isle of Wight; E. Poutiatine, St. Martin's, Scilly Islands, June, 1899, E. George; Torquay, Miss E. H. Boning); S.W. Scotland (Cumbrae, August, 1891, E. A. B.).

Gen. 50. Ulva L.

U. lactuca L. α *rigida* Le Jol. (= *U. rigida* Ag.). South coast of England (Torquay, Plymouth, Weymouth); Channel Islands (Alderney). Rare. — β *latissima* DC. (= *U. latissima* J. Ag.). Everywhere common.—γ *myriotrema* Born. (= *U. myriotrema* Crn.). S. coast of England (Torquay, Weymouth), and Northumberland

(Berwick). Rare. — ♂ *nana* (Suhr). Coast of Northumberland (Berwick); Scotland (Arbroath). Probably common.

Fam. Ulothrichaceæ Rabenh.

Gen. 51. Ulothrix Kütz.

U. implexa Kütz. (= *Lyngbya Cutleriæ* Harv.). Coasts of Devon (Budleigh Salterton), Sussex (Lancing), Yorkshire (Scarborough), and Northumberland (Berwick); Wales (Point of Ayr); Scotland (Cumbrae). Rare.

U. flacca Thur. (= *Lyngbya flacca* and *L. Carmichælii* Harv.). Coasts of England, S. Scotland, and Ireland. Not uncommon.

U. speciosa Kütz. (= *Lyngbya speciosa* Carm.). Coasts of Devon (Torquay, Paignton), Cornwall (Mounts Bay), Dorset (Weymouth), Durham (North Sunderland), and Northumberland (Berwick); Scotland (Appin, Dunbar, Girdleness); Ireland (Ballycastle). Rare.

Fam. Chætophoraceæ Wittr.

Gen. 52. Phæophila Hauck.

P. dendroides Batt. (= *Ochlochæte dendroides* Crn. and *Phæophila Floridearum* Hauck). Coast of Dorset (Weymouth, Swanage). Rare.

P. Engleri Rke. Coast of Dorset (Weymouth). Rare.

Gen. 53. Ochlochæte Thw.

O. hystrix Thw. Coasts of Dorset (Littlesea, Studland) and Gloucester (near Bristol). Very rare.

O. ferox Huber. S.W. coast of Scotland (Cumbrae). Rare.

Gen. 54. Acrochæte Pringsh.

A. repens Pringsh. Coast of Dorset (Weymouth, Swanage); Scotland (Cumbrae). Rare.

A. parasitica Oltm. Coasts of Northumberland (Berwick) and Devon (Sidmouth). Probably common.

Gen. 55. Bolbocoleon Pringsh.

B. piliferum Pringsh. Coasts of Dorset (Chapman's Pool, Swanage, Weymouth) and S. Scotland (Cumbrae, Dunbar). S.E. Ireland (Dungarvan Bay). Probably common.

Gen. 56. Pilinia Kütz.

P. rimosa Kütz. Coasts of Dorset (Swanage), Norfolk (Yarmouth), and Northumberland (Berwick).

Gen. 57. Blastophysa.

B. rhizopus Rke. Coast of Norfolk (Yarmouth). S.W. Scotland (Cumbrae); Ireland (Torr Head, Antrim).

Gen. 58. Endoderma Lagerh. (incl. Epicladia Rke.).

E. viride Lagerh. Coast of Devon (Torquay, Teignmouth); S.W. Scotland (Cumbrae, Arran); S.E. Ireland (Dungarvan Bay). Not uncommon.

E. Wittrockii Wille. Coast of Northumberland (Berwick); N. Wales (Puffin Island, Hilbre Island); S.W. Scotland (Arran, Cumbrae). Probably common.

E. leptochæte Huber. Coast of Devon (Teignmouth). Rare.

E. Flustræ Batt. (= *Epicladia Flustræ* Rke.). Common on the coasts of England and S. Scotland; Ireland (Belfast Lough).—*β Phillipsii* Batt. N. Wales (Bangor). Rare.

Gen. 59. Tellamia Batt.

T. contorta Batt. Coasts of Cornwall (Padstow), Devon (Plymouth, Sidmouth, &c.), Dorset (Swanage, Weymouth), and Northumberland (Berwick); S.W. Scotland (Cumbrae); Ireland (Galway Bay). Common.

T. intricata Batt. Coast of Dorset (Weymouth, Swanage); S.W. Scotland (Cumbrae); Ireland (Galway Bay). Not uncommon.

Fam. Cladophoraceæ Wittr.

Gen. 60. Urospora Aresch.

U. isogona Batt. (= *Conferva isogona* Eng. Bot. tab. 1930; *Conferva Youngana* Dillw.; and *Urospora penicilliformis* Aresch. ex parte). Coasts of Cornwall (Par), Devon (Torquay), Norfolk (Yarmouth), Essex (Clacton), and Northumberland (Berwick); Wales (near Dunraven Castle, Glamorganshire); Scotland (Joppa, near Edinburgh; Dunbar; Elie, Fifeshire; Arbroath, Montrose, Cumbrae, Oban, &c.). Not uncommon.

U. bangioides Holm. & Batt. (*Conferva bangioides*). Coasts of Devon (Torquay, Plymouth); N. Wales (Puffin Island); Scotland (Oban, Argyleshire; Port Ballantrae, Bay of Nigg, near Aberdeen; Montrose Ness); Ireland (Ballycotton).

U. collabens Holm. & Batt. (= *Conferva collabens* Ag.). Coast of Norfolk (Yarmouth); S.W. Scotland (Cumbrae). Very rare.

Gen. 61. Chætomorpha Kütz.

α Tortuosæ.

C. tortuosa Kütz. (= *Conferva tortuosa* Dillw. and *Chætomorpha implexa* Holm. & Batt. Rev. List). Coasts of Cornwall (Mounts Bay, Falmouth, Looe, Fowey, &c.), Devon (Ilfracombe, Plymouth, Torbay, &c.), Norfolk (Yarmouth), and Northumberland (Berwick); Wales (Swansea, Puffin Island, Anglesea); Isle of Man; Scotland (Castle Toward, Oban, Cumbrae, Saltcoats, Dunbar, Joppa, Firth of Forth, Largo and Elie, Fifeshire; Nigg Bay, Kincardine: Orkney Islands); Ireland (Roundstone, Bantry, Miltown Malbay, Skerries); Channel Islands (Jersey, Guernsey). Not uncommon.

C. litorea Cook (= *Conferva litorea* Harv., *C. chlorotica* Kütz., and *C. cannabina* Traill, Ork. Alg.). Coasts of Devon (Plymouth), Sussex (Lancing), and Essex (Walton); Wales (Bangor); Scotland (Appin, Arran, Cumbrae, Orkney Islands). Rare.

C. linum Kütz. (= *Conferva sutoria* Berk.). Coasts of Cornwall (Penzance), Dorset (Weymouth), Hants (Isle of Wight), Sussex (Lancing), Essex (Southend), Norfolk (Yarmouth), Durham (Hartlepool), and Northumberland (Holy Island, &c.); Wales (Anglesea,

Puffin Island); Scotland (Cumbrae, Oban, Joppa, Orkney Islands). Not uncommon.—*β pulvinata* Batt. Scotland (Cumbrae). Rare.

C. crassa Kütz. (= *Conferva linum* Harv. non alior.). Ireland (Ditches by the North Wall, Dublin); Channel Islands (Guernsey). Rare.

β Strictæ.

C. ærea Kütz. (= *Conferva ærea* Dillw. and *Chætomorpha baltica* Kütz.). Coasts of Cornwall (Mount's Bay, Land's End, Falmouth, Padstow, Looe, &c.), Devon (Ilfracombe, Torbay, Sidmouth, &c.), Dorset (Durleston Head), Hants (Isle of Wight), Sussex (Bognor), Suffolk (Felixstowe), Norfolk (Cromer), Yorkshire (Scarborough), and Northumberland (Alnmouth, Berwick); Scotland (Dunbar, Orkney Islands, Arran, Cumbrae, &c.); Wales (Laugharne Harb., Carmarthen, Anglesea, Puffin Island); Ireland (Roundstone, Kilkee, &c.); Channel Islands (Jersey, Guernsey, &c.). Not uncommon.

C. Melagonium Kütz. (= *Conferva Melagonium* Web. & Mohr. *β rupincola* Aresch.). Coasts of Cornwall (St. Minver, Mount's Bay, Kynance Cove, &c.), Devon (Torquay, Sidmouth, &c.), Dorset Swanage, Weymouth, &c.), Hants (Isle of Wight), Sussex (Bognor), Suffolk (Felixstowe), Norfolk (Runton), Yorkshire (Scarborough), and Northumberland Berwick); Wales (Puffin Island, &c.); Isle of Man; Scotland (Dunbar, Firth of Forth; Joppa, near Edinburgh; Elie, Fifeshire; Arbroath, Orkney and Shetland Islands, Cumbrae, Arran, Sound of Kerrara, &c.); Channel Islands (Jersey). Widely distributed, but nowhere in great abundance.

Gen. 62. Rhizoclonium Kütz.

R. Kochianum Kütz. (incl. *R. implexum* Kütz.). Coasts of Devon (Plymouth) and Northumberland (Berwick); Scotland (Elie, Fifeshire; Cumbrae); Ireland (Roundstone). Rare.

R. implexum nob. non Kütz. (= *Conferva implexa* Dillw., *R. tortuosum* Kütz., and *R. rigidum* Gobi). Coasts of Cornwall (Mount Edgecumbe, Mount's Bay), Devon (Ilfracombe, Torbay, Sidmouth), Dorset (Weymouth), Essex (Clacton), Durham (Seaham Harbour), and Northumberland (Tynemouth, Bamburgh, Berwick); Scotland (Firth of Forth, Dunbar, Girdleness, Saltcoats, Arran, Cumbrae, Orkney Islands); Ireland (Malbay); Channel Islands (Guernsey). Not uncommon.

R. arenicola Reinb. (= *Conferva arenicola* Berk.). Coasts of Cornwall (Marazion) and Dorset (Poole). Rare.

R. arenosum Kütz. (= *Conferva arenosa* Carm. and *R. flavicans* Rab.). Coasts of Cornwall (Talland Bay) and Devon (Tor Abbey); Scotland (Appin, Cumbrae, Wemyss Bay, Elie, Fifeshire; Orkney Islands); Ireland (Bantry Bay). Rare.

R. riparium Harv. Coasts of Cornwall (Trevone, Fowey, St. Minver), Devon (Torquay, Sidmouth), Dorset (Weymouth, Swanage), Sussex (Bognor), Kent (Deal), Essex (Harwich), Norfolk (Yarmouth), and Northumberland (Sunderland, Tynemouth, Berwick, Holy Island); Wales (Puffin Island, Hilbre Island); Isle of Man; Ireland (Bantry, &c.); Channel Islands (Jersey). Common.—

β Casparyi Holm. & Batt. (= *R. Casparyi* Harv.). Coast of Cornwall (Falmouth, Penzance, Mousehole, St. Minver). Rare.

Gen. 63. Cladophora Kütz.

Subgenus 1. Eucladophora Farlow.

C. prolifera Kütz. Coast of Dorset (Weymouth). Rare.

C. pellucida Kütz. Coasts of Cornwall (Mount's Bay, Falmouth, Looe, Fowey, &c.), Devon (Torquay, Plymouth, Salcombe), Dorset (Weymouth), Hants (Isle of Wight), Sussex (Bognor), and Norfolk (Yarmouth); Wales (Anglesea, Puffin Island); Isle of Man; Scotland (Cumbrae, Orkney Islands); Ireland (Belfast Lough, Roundstone, Malbay, &c.); Channel Islands (Guernsey, Jersey). Not uncommon on the shores of England and Ireland; very rare in Scotland. — *α comosa* Kütz. Coast of Wales (Puffin Island).—*β cristata* Kütz. Coast of Ireland (Roundstone); S. England (Bognor).—*γ curvata* Kütz. Isle of Man.

C. Hutchinsiæ Harv. Coasts of Cornwall (Fowey, Falmouth, Scilly Islands), Devon (Plymouth, Torquay, Salcombe, Sidmouth), Dorset (Swanage, Weymouth), Hants (Isle of Wight), Sussex (Brighton, Bognor), Essex (Harwich), Suffolk (Felixstowe), and Northumberland (Berwick, Holy Island); Wales (Anglesea, Hilbre Island); Isle of Man; Scotland (Burnmouth, Ardrossan, Cumbrae, Saltcoats, Orkney Islands); Ireland (Belfast Bay, Bantry, Larne). Not uncommon on the coasts of England and Ireland; rare in Scotland. — *α divaricata* Harv. Coasts of Devon (Torquay) and Isle of Man. — *β distans* Kütz. (= *C. diffusa* Harv.). Coasts of Cornwall (Looe, Scilly Islands, Falmouth), Devon (Torquay, Bovisand, Sidmouth), and Sussex (Brighton); Wales (Swansea); Scotland (Bute); Ireland (Portrush, Malbay, &c.); Channel Islands (Guernsey). Not uncommon.

C. falcata Harv. Coast of Devon (Plymouth); Ireland (Dingle Harbour, Kerry); Channel Islands (Jersey). Very rare.

C. Macallana Harv. Dredged in Roundstone Bay.

C. rectangularis Harv. Coasts of Cornwall (Whitsand Bay, Scilly Islands), Devon (Tor Abbey, Meadfoot), Dorset (Swanage), and Hants (Isle of Wight); Ireland (Roundstone Bay, Great Aran Island, Galway Bay). Very rare on the English coast, but locally abundant on that of the West of Ireland. — *α subnuda* Kütz. Coast of Devon (Torquay).—*β horrida* Kütz. (= *Conferva Crouani* Chauv.). W. coast of Ireland (Roundstone Bay and S.W. Scotland (Arran). — *γ hispida* Kütz. Coasts of Devon (Torquay) and N. Ireland (Roundstone Bay).

C. Neesiorum Kütz. *β humilis* Batt. (= *C. humilis* Kütz.). Coasts of Devon (Sidmouth), Dorset (Swanage), Sussex (Bognor), and Northumberland (Berwick); Scotland (Cumbrae). Probably not uncommon.

C. rupestris Kütz. Coasts of Cornwall (Mount's Bay, Falmouth, Looe, Fowey, &c.), Devon (Plymouth, Whitsand Bay, Sidmouth, &c.), Somerset (Minehead), Dorset (Weymouth, Swanage, &c.), Hants (Isle of Wight, Christchurch), Sussex (Bognor, Worthing, Hastings), Kent (Deal, Ramsgate), Essex (Harwich, Clacton),

Suffolk (Felixstowe), Norfolk (Yarmouth, Cromer), Yorkshire (Scarborough, Whitby, Filey), Durham (Sunderland), and Northumberland (Holy Island, Bamborough, Berwick); Wales (Hilbre Island, Puffin Island, Anglesea, &c.); Scotland (Dunbar, Elie, Fife; Aberdeen, Peterhead, Orkney Islands, Oban, Cumbrae, Arran, &c.); Ireland (Bantry Bay, Cork, Howth, Portaferry, Belfast Lough, Roundstone Bay, Kilkee, &c.); Channel Islands. Common and abundant on the shores of the British Islands. — *β distorta* Harv. On submarine peat at Birturbui Bay, Connemara. — *γ nuda* Holm. & Batt. (= *C. nuda* Harv.). Port Stewart, Co. Antrim.

C. hirta Kütz. (= *Conferva flexuosa* Dillw., non Eng. Bot.). Coasts of Cornwall (Falmouth), Devon (Sidmouth), Dorset (Weymouth), Sussex (Bognor), Suffolk (Felixstowe), and Northumberland (Berwick). Not uncommon.

C. utriculosa Kütz. (= *C. lætevirens* Harv. partim). Coasts of Cornwall (Plymouth, Scilly Islands), Devon (Torquay, Sidmouth), Dorset (Weymouth), Sussex (Bognor, Worthing), and Hants (Ventnor, Isle of Wight); Isle of Man; Wales (Puffin Island, Anglesea); Scotland (Cumbrae, Loch Etive). Not uncommon. — *β diffusa* Hauck. Coasts of Sussex (Bognor) and Norfolk (Yarmouth, Cromer).

C. trichocoma Kütz. Coast of Sussex (Bognor); Scotland (Cumbrae); Ireland (Kilkee). Rare.

C. gracilis Kütz. Coasts of Cornwall (Mount's Bay, Falmouth, Looe), Devon (Torquay, Plymouth), Dorset (Weymouth, Studland), Hants (Isle of Wight), Sussex (Brighton), Norfolk (Cromer), and Northumberland (near Hartley); Scotland (Peterhead, Ballantrae, Cumbrae, Fairlie, Ardrossan, Orkney Islands); Ireland (Youghal, Cork Harbour, Wicklow, Belfast Lough). Not common.—*β tenuis* Thur. Coast of Dorset (Weymouth, Studland). Rare.

C. sericea Kütz. (= *Conferva lætevirens* Dillw. and *Cladophora crystallina* Kütz.). Coasts of Cornwall (Mount's Bay, Falmouth, Looe, Fowey, St. Minver), Devon (Plymouth, Torquay, Sidmouth), Dorset (Weymouth, Swanage), Hants (Ventnor, Isle of Wight), Sussex (Bognor, Worthing, Brighton, Pagham), Kent (Deal), Norfolk (Cromer), Yorkshire (Scarborough, Filey), and Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Wales (Hilbre Island, Swansea); Scotland (Dunbar; Elie, Fife; Arbroath, Girdleness, Peterhead, Orkney Islands, Loch Etive, Cumbrae); Ireland (Bantry Bay, Cork, Antrim coast, Roundstone Bay, &c.); Channel Islands. Common.

C. glaucescens Harv. Coasts of Cornwall (Mount's Bay, Falmouth, Looe), Devon (Torquay, Plymouth), Dorset (Weymouth), Sussex (Brighton), Essex (Harwich), Kent (Deal), Suffolk (Felixstowe), and Yorkshire (Scarborough); Wales (Hilbre Island, Puffin Island, Anglesea); Scotland (Elie, Fife; Aberdeen, Orkney Islands, Cumbrae, &c.); Ireland (Portmarnock, Mangan's Bay, Cork; coast of Down, Kingston); Channel Islands (Jersey). Not common.

C. flexuosa Harv. Coasts of Cornwall (Mount's Bay, Falmouth, Fowey), Devon (Plymouth, Torquay, Sidmouth), Dorset (Weymouth), Sussex (Brighton, Eastbourne), and Cheshire (Eastham);

Wales (Hilbre Island, Puffin Island, Anglesea); Scotland (Aberdeen, Montrose Ness); Ireland (Ballycastle, Antrim); Channel Islands (Guernsey, Alderney). Not uncommon.

C. refracta Aresch. (Harv. partim; non Kütz.). Coasts of Cornwall (Falmouth) and Devon (Torquay, Ilfracombe); Scotland (Skaill, Orkney Islands); Ireland (Kilkee). Probably not uncommon.

C. corymbifera Kütz. Coasts of Hants (Cowes, Isle of Wight) and Northumberland (Berwick). Rare.

C. albida Kütz. Coasts of Cornwall (Mount's Bay, Falmouth, Looe, St. Minver), Devon (Torquay, Bovisand, Dawlish), Dorset (Weymouth, Portland, Swanage), Sussex (Brighton), Hants (Cowes, Isle of Wight), Essex (Dovercourt), Suffolk (Felixstowe), Norfolk (Cromer), and Northumberland (Berwick); Wales (Puffin Island); Isle of Man; Scotland (Elie, Fife; Arbroath, Orkney Islands, Cumbrae, Arran); S. & W. Ireland (Bantry Bay, Cork Harbour, Roundstone Bay); Channel Islands. Not uncommon.—*β refracta* Thur. (= *Conferva refracta* Wyatt, Alg. Danm. no. 228; *Cladophora refracta* Harv. partim; *C. curvula* Kütz.). Coasts of Cornwall (Penzance, Mount's Bay, Falmouth, Fowey, Looe), Devon (Ilfracombe, Torquay), Sussex (Brighton, Bognor), and Norfolk (Cromer); Wales (Puffin Island, Anglesea); Isle of Man; Scotland (Dunbar; Elie, Fife; Orkney Islands, Cumbrae, Saltcoats); Ireland (Kilkee, Dingle, Cork Harbour, Dunlecky Castle, Howth, Balbriggan, Giant's Causeway); Channel Islands. Not uncommon.

C. Balliana Harv. E. coast of Ireland (Clontarf, Portaferry); S.W. Scotland (Ailsa Craig, Cumbrae); N.W. England (Puffin Island). Rare.

C. Rudolphiana Harv. Coasts of Cornwall (Falmouth) and Northumberland (Holy Island, Berwick); Scotland (Cumbrae); Ireland (Roundstone Bay, Connemara). Abundant at Roundstone; very rare elsewhere.

C. expansa Kütz. Coasts of Dorset (Weymouth) and Norfolk (Cley). Rare.

C. fracta Kütz. *α marina* Hauck. Coasts of Devon (Plymouth), Dorset (Lodmoor, near Weymouth; Poole), Hants (Southampton), Sussex (Brighton), Suffolk (Felixstowe), Norfolk (Yarmouth, Cley), Yorkshire (Scarborough), Durham (Sunderland, Ryhope, Seaton), and Northumberland (Fenham Flats); Wales (Anglesea); Scotland (Orkney Islands, Arran, Cumbrae, &c.); Ireland (Cork Harbour, Antrim coast, &c.); Channel Islands (Guernsey). Common.—*β flavescens* (= *C. flavescens* Harv., non Kütz.). Coasts of Dorset (Lodmoor, near Weymouth), Sussex (Lancing), Norfolk (Cromer, Cley), and Northumberland (Fenham Flats); Ireland (Co. Cork, &c.); Channel Islands (Guernsey). Not uncommon. — *γ patens* Holm. & Batt. (= *C. refracta* Holm. Alg. Br. Rar. Exsicc. no. 91, non Aresch.). Coast of Dorset (Lodmoor, near Weymouth). Rare. — *δ flexuosa* (= *Conferva flexuosa* Holm. Fasc. no. 56, non Dillw. nec Eng. Bot. nec Griff.). Coast of Norfolk (Cley). Rare.

C. Magdalenæ Harv. Coasts of Dorset (Weymouth, Portland), Hants (Freshwater, Isle of Wight), and Sussex (Pagham); Channel Islands (Jersey). Rare.

Subgenus 2. Ægagropila Kütz.

C. repens Kütz. Coasts of Dorset (Weymouth) and Northumberland (Spittal, near Berwick); Channel Islands (Jersey, Guernsey). Very rare.

C. Brownii Harv. Coast of Cornwall (Mousehole, Penzance); Ireland (Dunrea, Blackcastle, Wicklow). Very rare.

C. cornea Kütz. *β verticillata* Kütz. (= *C. retroflexa* Crn.), Coast of Dorset (Weymouth); Ireland (Roundstone Bay, Fahy Bay, Connemara). Very rare.

C. corynarthra Kütz. *β spinescens* Batt. Coast of Dorset (Weymouth); Ireland (Roundstone Bay, Connemara).

Subgenus 3. Spongomorpha Kütz. (= Acrosiphonia J. Ag. partim).

C. arcta Kütz. Coasts of Cornwall (Mount's Bay, St. Minver, Looe, Falmouth, Scilly Islands), Devon (Torquay, Plymouth, Sidmouth), Dorset (Swanage, Weymouth), Hants (Isle of Wight), Sussex (Bognor), Norfolk (Cromer), Yorkshire (Scarborough), Durham (Sunderland, &c.), and Northumberland (Holy Island, Berwick, &c.); Cheshire (Eastham, Bromborough); Isle of Man; Wales (Anglesea, Puffin Island); Scotland (Dunbar; Joppa, near Edinburgh; Elie, Fife; Orkney and Shetland Islands, Appin, Ardchattan, Cumbrae, Arran, &c.); Ireland (Bantry Bay, Cork Harbour, Antrim coast, &c.); Channel Islands. Not uncommon. — *β vaucheriæformis* Harv. Coasts of Dorset (Weymouth, Swanage) and Northumberland (Berwick); Scotland (Dunbar). Rather rare. — *γ radians* Batt. (= *C. radians* Kütz.). Coasts of Cornwall (Scilly Islands, Falmouth), Devon (Torquay), Dorset (Weymouth, Swanage), Yorkshire (Filey), and Northumberland (Berwick); Orkney Islands. Not uncommon. — *δ centralis* Harv. Coast of Devon (Torquay); Orkney Islands. Rare.

C. Traillii Batt. (= *Acrosiphonia Traillii* Batt.). Joppa, near Edinburgh. Very rare.

C. Sonderi Kütz. Coast of Dorset (Weymouth); Orkney Islands. Very rare.

C. arctiuscula Kütz. Coast of Northumberland (Berwick); Scotland (Dunbar, Joppa, Arbroath). Probably not uncommon.

C. stolonifera Batt. (= *Acrosiphonia stolonifera* Kjellm.). Coast of Northumberland (Berwick); S.W. Scotland (Cumbrae). Rare.

C. pallida Batt. (= *A. pallida* Kjellm.). Coast of Northumberland (Berwick); S.W. Scotland (Cumbrae).

C. uncialis Kütz. (incl. *C. congregata* Kütz.). Coasts of Cornwall (St. Michael's Mount, Falmouth, St. Minver), Devon (Wildersmouth, Torbay, Bovisand), Dorset (Swanage), Suffolk (Felixstowe, Harwich), and Northumberland (Berwick); Isle of Man; Wales (Puffin Island, Aberystwith, &c.); Scotland (Dunbar; Elie, Fife; Orkney Islands, Lismore); Ireland (Malahide, Kingstown, Balbriggan; Newcastle, Co. Down; Rathlin Island, Antrim).

C. bombycina Batt. (= *Acrosiphonia bombycina* Kjellm.; *C. lanosa* Harv. pro parte). Coasts of Devon (Torquay), Sussex (Bognor), and Northumberland (Berwick); Scotland (Orkney Islands, Bute). Not uncommon.

C. lanosa Kütz. Coasts of Cornwall (St. Minver, Falmouth, Looe), Devon (Torquay, Ilfracombe, Plymouth, Sidmouth), Sussex (Bognor, Brighton), Norfolk (Cromer), Kent (Dover), Yorkshire (Scarborough), Durham (Sunderland), and Northumberland (Holy Island, Berwick); Isle of Man; Wales (Puffin Island, Anglesea); Scotland (Dunbar; Elie, Fife; Orkney Islands, Forres, Lismore, Arran, Cumbrae, &c.); Ireland (Bantry Bay, &c.); Channel Islands. Not uncommon.—*β Zosteræ* (Dillw.). Coasts of Dorset (Weymouth) and Sussex (Bognor, Brighton, Worthing); Scotland (Forres). Rather rare.

Fam. Gomontiaceæ Born. & Flah.

Gen. 64. Gomontia Born. & Flah.

G. polyrhiza Born. & Flah. (Immersed in the chalky shells of several species of molluscs.) Coasts of Devon (Teignmouth, Torquay, Sidmouth, Plymouth), Dorset (Weymouth, Swanage), Norfolk (Cromer), and Northumberland (Berwick); Scotland (Dunbar, Cumbrae); Ireland (Belfast Lough). Not uncommon.

G. manxiana Chodat. Castletown, Isle of Man. Rare?

Suborder Siphoneæ Grev.

Fam. Phyllosiphonaceæ Frank.

Gen. 65. Ostreobium Born. & Flah.

O. Queketti Born. & Flah. Immersed in the chalky shells of various species of molluscs. Coasts of Devon (Plymouth, Sidmouth) and Northumberland (Berwick). Scotland: Bute (Isle of Cumbrae); Argyle (Loch Fyne); Dumbarton (Gare Loch). Not uncommon.

Fam. Hydrogastraceæ Rabenh. (*Botrydiaceæ* Rostaf. & Woron.).

Gen. 66. Halicystis Aresch.

H. ovalis Aresch. (*Valonia ovalis* Ag.). Scotland: Argyle (Loch Goil); Bute (Kyles of Bute, Isle of Arran). Ireland: Antrim (N. side of Belfast Lough); Co. Dublin (Dalky Sound); Co. Waterford (Helvick Point, Dungarvan Bay). Very rare, and only obtained by dredging.

Fam. Bryopsidaceæ Thur.

Gen. 67. Bryopsis Lamour.

B. hypnoides Lamour. Coasts of Cornwall (Scilly Islands, Mount's Bay, Falmouth, Fowey, Looe); Devon (Ilfracombe, Torquay); Dorset (Weymouth, Swanage, Studland); Sussex (Bognor); Cheshire (Hilbre Island). Scotland: Argyle (Appin); Ayr (Portincross, Seamill, Saltcoats); Kirkcudbright (Southerness); Haddington (Prestonpans). Ireland: Co. Galway (Roundstone); Co. Clare (Kilkee, Portrush). Channel Islands (Jersey, Guernsey, Alderney, Sark). Rather rare on the English and Scotch coasts; not uncommon on the W. coast of Ireland.

B. plumosa Ag. Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Fowey, Looe); Devon (Plymouth, Exmouth, Torquay, &c.); Dorset (Swanage); Hants (Ventnor and Steephill, I. of W.) Sussex (Bognor, Brighton, Hastings); Kent (Folkestone); Essex

(Harwich); Suffolk (Felixstowe), Norfolk (Runton, Cromer); Yorks (Filey, Scarborough, Whitby); Durham (Seaton Carew, Hartlepool, Seaham Harbour); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Isle of Man. Wales: Anglesea (Puffin Island, Isle of Anglesea). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar, Longniddry, Prestonpans); Edinburgh (Joppa); Fife (Queensferry, Kirkcaldy, Largo, Elie, &c.); Kincardine (Cove); Aberdeen (Peterhead); Moray Firth; Orkney Islands; Argyle (Appin); Bute (Isles of Cumbrae and Arran); Ayr (Saltcoats, Girvan, &c.). Ireland, Channel Islands (Jersey, Guernsey, Alderney, Sark). Not uncommon.—*β subsimplex* Holm. & Batt. Coast of Devon (Ilfracombe, Torquay). Rare. — *γ nuda* Holmes, Alg. Br. Rar. Exsicc. no. 178. Coast of Dorset (Portland).

Gen. 68. Derbesia Solier.

D. tenuissima Crn. (= *Vaucheria marina* Harv.). Coasts of Devon (Torquay, Sidmouth, Salcombe) and Dorset (Swanage). Scotland: Argyle (Appin). Rare.

Fam. Vaucheriaceæ Dumort.

Gen. 69. Vaucheria DC.

V. dichotoma Lyngb. *β marina* Ag. Coast of Dorset (Weymouth). Scotland: Argyle (Appin). Rare.

V. Thuretii Woron. (= *V. velutina* Harv. partim). Coasts of Dorset (Weymouth) and Northumberland (Berwick). Scotland: Argyle (Appin); Bute (Brodick, Arran); Ayr (Largs). Probably not uncommon.

V. synandra Woron. Coast of Lancashire (near Ulverstone). Rare.

V. sphærospora Nordst. *a genuina* Nordst. f. *synoica* Nordst. Coast of Cornwall (Saltash). Scotland: Argyle (Appin, Ballachulish). Ireland (Cushendall, Co. Antrim). Rare.—f. *dioica* Rosenv. (= *V. velutina* Harv. partim et *V. piloboloides* Holmes, Alg. Br. Rar. Exsicc. no. 50, non Thur.). Coasts of Cornwall (Fowey, Saltash); Devon (Sidmouth); Essex (Maldon); Norfolk (Cley); Northumberland (Berwick). Scotland: Haddington (Dunbar); Orkney Islands; Bute (Isle of Cumbrae); Ayr (Seamill). Ireland (Cushendall, Co. Antrim). Not uncommon.

V. coronata Nordst. Coast of Forfar (Arbroath). Rare.

V. litorea Bang & Ag. Coasts of Dorset (Lodmoor, near Weymouth); Essex (Clacton); Lancs (Ulverstone). Wales: Merioneth (between Barmouth and Dolgelly); Carmarthen (Ferryside). Scotland (Inverness). Ireland N.E. Rather rare.

Fam. Spongodiaceæ Lamour.

Gen. 70. Codium Stackh.

C. adhærens Ag. Coasts of Cornwall (Land's End, Sennen Cove, Falmouth, Gerran's Bay, Gorran Haven, Fowey); Devon (Wembury, Torbay); Dorset (Durlston Head); Isle of Man (Port St. Mary). Ireland (Rathlin Island, Co. Antrim; Tory Island, Co. Donegal). Channel Islands (Jersey, Guernsey, Alderney). Rare.

C. amphibium Moore. Coasts of Cornwall (Falmouth); Isle of Man (Perwick Bay, Port St. Mary). Ireland (Roundstone, Co. Galway). Very rare.

C. tomentosum Stackh. Coasts of Cornwall (Padstow, Penzance, Scilly Islands, Falmouth, Gerran's Bay, Fowey, Looe); Devon (Ilfracombe, Plymouth, Dawlish, Exmouth, Sidmouth, Torquay); Dorset (Weymouth, Swanage); Hants (Steephill and W. Cowes, Isle of Wight); Yorkshire; Durham; Isle of Man. Scotland: Aberdeen (Peterhead); Orkney Islands; Bute (Isle of Cumbrae). Ireland: Bantry Bay, Co. Cork; Milltown Malbay, and Kilkee, Co. Clare, &c. Channel Islands (Jersey, Guernsey, Alderney, Sark). Not uncommon.

C. elongatum Ag. W. coast of Ireland (Kilkee, Co. Clare). Very rare.

C. Bursa Ag. Coasts of Cornwall and Devon (Stonehouse Pool, Torquay); Sussex (Brighton). Ireland (near Belfast). Channel Islands (Jersey). Very rare.

Order FUCOIDEÆ J. Ag.

Suborder Phæosporeæ Thur.

Fam. Desmarestiaceæ Thur.

Gen. 71. Desmarestia Lamour.

D. viridis Lamour. Coasts of Cornwall (St. Minver, Mount's Bay, Trefusis, Falmouth, Looe); Devon (Plymouth, Torbay, Budleigh Salterton, Sidmouth); Dorset (Weymouth); Sussex (Brighton); Norfolk (Yarmouth); Yorks (Filey, Scarborough, Whitby); Durham (Hartlepool); Northumberland (Cullercoats, Whitley, Alnmouth, Holy Island, Berwick); Isle of Man. Wales (Anglesea, Puffin Island). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Caroline Park); Fife (Seafield, Dysart, Elie, Earlsferry); Kincardine (Girdleness); Aberdeen; Moray Firth (Forres); Orkney Islands; Argyle (Ardchattan, Loch Etive, Dunoon); Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats). Ireland (Bantry Bay, Co. Cork; Larne, Co. Antrim, &c., not uncommon). Channel Islands (Jersey, Guernsey). Not uncommon.

D. aculeata Lamour. Coasts of Cornwall (St. Minver, Padstow, Mount's Bay, Trefusis, Falmouth, Looe); Devon (Torbay, Teignmouth, Exmouth, Salcombe, Ilfracombe); Dorset (Weymouth, Portland, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton); Kent (Folkestone, Dover, Deal); Norfolk (Yarmouth); Yorks (Scarborough, Whitby); Durham (Sunderland, &c.); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Isle of Man. Wales: Anglesea (Llanvælog, Llangwyfan, Puffin Island); Carnarvon (Swillies). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, North Berwick); Edinburgh (Joppa); Fife (Seafield, Kirkcaldy, Earlsferry, Elie); Forfar (Arbroath); Aberdeen; Moray Firth; Orkney Islands; Argyle (Oban, Appin, Loch Etive, Loch Fyne, Campbeltown); Dumbarton (Gare Loch); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Heads of Ayr, Fairlie). Ireland: Abundant all round the coast. Channel Islands (Jersey,

Guernsey, Alderney). Common. — *β inermis* Crn. Alg. Mar. Fin. 93; Florule, p. 170. Coast of Cornwall (St. Minver). Rare.

D. ligulata Lamour. Coasts of Cornwall (St. Minver, Mount's Bay, Lizard, Kynance Cove, Falmouth, Looe, Cawsand); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Dorset (Weymouth, Portland, Swanage); Hants (Isle of Wight); Sussex (Brighton, Hastings); Kent (Folkestone, Dover, Deal); Suffolk (Corton); Norfolk (Yarmouth, Cromer); Yorks (Filey); Northumberland (Newbiggen, Alnmouth, Holy Island); Isle of Man. Wales: Anglesea (Llangwyfan, Llanvaelog); Carnarvon (Swillies); Denbigh (Abergele). Scotland: Edinburgh (Joppa, Newhaven); Kincardine (Girdleness); Aberdeen; Orkney Islands; Argyle (Southend, Kintyre, Campbeltown); Bute (Isle of Cumbrae); Ayr (Ballantrae). Ireland: Bantry Bay, Co. Cork; Giant's Causeway, Co. Antrim; Milltown Malbay, Co. Clare; Roundstone, Co. Galway, not uncommon on the shores of the S. & W. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the shores of the S. and W. of England and Ireland and those of the Channel and Orkney Islands. Rare elsewhere in Britain. — *β angustior* (Turn.). Not uncommon on the southern and western shores of England and Ireland; Orkney Islands.—*γ dilatata* (Turn.). S. coast of England; Orkney Islands.

D. Dresnayi Lamour. Coasts of Cornwall (Lizard) and Devon (Plymouth, dredged off the Eddystone Lighthouse). Ireland (Moville Bay, Lough Foyle, twenty miles below Londonderry). Very rare.

Fam. Dictyosiphonaceæ Thur.

Gen. 72. Dictyosiphon Grev.

D. fœniculaceus Grev. Coasts of Cornwall (Falmouth, Torpoint); Devon (Plymouth, Exmouth, Sidmouth); Dorset (Weymouth); Yorks (Filey, Scarborough); Durham (Sunderland); Northumberland (Cullercoats, Alnmouth, Bamborough, Holy Island, Berwick); Isle of Man. Wales: Carnarvon (Bangor); Anglesea (Penmon Point, Llanvælog, Puffin Island). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, Longniddry); Edinburgh (Joppa); Fife (Kinghorn, Earlsferry, Elie, Fife Ness); Forfar (Arbroath); Aberdeen; Orkney Islands; Argyle (Oban, Campbeltown); Bute (Isles of Bute, Arran, and Cumbrae); Renfrew (Gourock, Wemyss Bay). Ireland (Bantry Bay, Co. Cork; Belfast, Co. Antrim, &c., frequent). Channel Islands (Jersey, Guernsey). Not common.—*β flaccida* Kjellm. Scotland: Haddington (North Berwick).

D. hispidus Kjellm. (= *D. fœniculaceus* var. *hispidus* Kjellm., Holm. & Batt. Rev. List). Coasts of Northumberland (Berwick); Haddington (Dunbar, Longniddry); Edinburgh (Joppa); Fife (Earlsferry, Fife Ness). Ireland (Kingstown, Co. Dublin). Rare.

D. hippuroides Kütz. Coasts of Yorks (Filey, Scarborough); Northumberland (Holy Island, Berwick). Wales (Anglesea, Carnarvon). Scotland: Berwick (Burnmouth, Eyemouth); Haddington (Dunbar, North Berwick); Edinburgh (Joppa); Fife (Kinghorn, Earlsferry, Elie, Fife Ness); Forfar (Arbroath); Orkney Islands; Bute (Isles of Arran and Cumbrae); Ayr (Fairlie). Common on

the shores of the North of England and Southern Scotland; probably not uncommon on those of the North of Scotland and Ireland. —*β fragilis* Kjellm. Orkney Islands. Ireland (Kilkee, Co. Clare). Rare.

D. Ekmani Aresch. *Observationes Phycologicæ*, part iii. p. 52. Epiphytic on *Scytosiphon lomentarius* and *Cystoclonium purpurascens* in pools near high-water mark. Coasts of Cornwall (Scilly Islands, June, 1899, E. George; Falmouth, F. W. Smith); Dorset (Weymouth, April, 1892, E. A. B.); Northumberland (Berwick, July, 1895; E. A. B.). Scotland: Fife (Kinghorn, Dr. R. K. Greville in Herb. Batters).

D. Chordaria Aresch. Coasts of Northumberland (Berwick). Scotland: Forfar (Arbroath); Bute (Isle of Cumbrae); Ayr (Portincross, Fairlie). Rare. — *β gelatinosa* Strömf. Orkney Islands (N. Ronaldsay). Very rare.

D. mesogloia Aresch. Coast of Northumberland (Holy Island). Scotland: Haddington (Dunbar, North Berwick, Longniddry); Fife (Earlsferry, Elie, St. Monance); Cromarty; Isle of Bute; Ayr (Fairlie). Very rare.

Gen. 73. Gobia Reinke.

G. baltica Reinke. Southern Scotland: Haddington (Dunbar); Bute (Kilchattan); Ayr (Fairlie). Very rare.

Fam. Punctariaceæ Thur.

Gen. 74. Mikrosyphar Kck.

M. Porphyræ Kck. Coast of Kent (Folkestone). Probably not uncommon.

M. Polysiphoniæ Kck. Coast of Northumberland (Berwick). Probably not uncommon.

Gen. 75. Phæostroma Kck.

P. pustulosum Kck. Coasts of Devon (Seaton); Northumberland (Berwick). Scotland: Bute (Isle of Cumbrae). Probably not uncommon.

P. prostratum Kck. S.W. coast of Scotland: Bute (Isle of Cumbrae). Rare.

Gen. 76. Symphyocarpus Rosenv.

S. strangulans Rosenv. Coasts of Northumberland (Berwick) and Bute (Isle of Cumbrae). Rare.

Gen. 77. Litosiphon Harv.

L. pusillus Harv. Coasts of Cornwall (Scilly Islands, Trevone Bay, St. Minver, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Teignmouth, Sidmouth); Dorset (Weymouth, Swanage); Northumberland (Alnmouth, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Carnarvon (Bangor); Anglesea (Towyn-y-Capel). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Fife (Elie, Pittenween); Aberdeen; Orkney Islands; Argyle (Appin, Oban); Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats, Ardrossan). Ireland: Ballycottin, Co. Cork; coast of

Down; Malbay and Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

L. Laminariæ Harv. Coasts of Cornwall (Scilly Isles, Trevone Bay, Mount's Bay, Fowey, Looe); Northumberland (Holy Island, Berwick). Wales: Anglesea (Llanvælog, Towyn-y-Capel). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Burntisland); Fife (Elie, Pittenweem); Forfar (Arbroath); Orkney Islands; Argyle (Appin). Ireland: Coast of Cork and Antrim; Aran Island, Co. Galway; Kilkee, Co. Clare. Not uncommon.

Subgenus Pogotrichum Reinke.

L. filiformis Batt. (= *Pogotrichum filiforme* Rke.). Coast of Dorset (Weymouth); Renfrew (Gare Loch); Bute (Isle of Cumbrae). Locally abundant.—*β gracilis* Batt. Renfrew (Gare Loch).

L. Hibernicus Batt. (= *Pogotrichum Hibernicum* T. Johns.). West coast of Ireland (Kilkee, Co. Clare). Rare.

Gen. 78. Phæospora Aresch. emend. Rke.

P. brachiata Born. (= *Ectocarpus brachiatus* Harv. et *Stictyosiphon Griffithsianus* Holm. & Batt.). Coasts of Cornwall (St. Michael's Mount, Mount's Bay, Lizard, Falmouth, Fowey, Mount Edgcumbe); Devon (Ilfracombe, Plymouth, Meadfoot, Torquay); Dorset (Weymouth); Hants (Isle of Wight). Scotland: Edinburgh (Joppa); Fife (Kincraig, Elie); Aberdeen (Peterhead); Orkney Islands (Kirkwall); Bute (Isle of Arran); Ayr (Seamill, Ardrossan); Renfrew (Wemyss Bay). Ireland (Youghal, Co. Cork; Lambay Island, Co. Dublin). Channel Islands (Alderney). Rather rare.

Gen. 79. Stictyosiphon Kütz.

S. subarticulatus Hauck. Coasts of Cornwall (Falmouth); Northumberland (Cullercoats, Berwick); Cheshire (Hilbre Island). Wales (Carnarvon). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Orkney Islands (Skaill); Bute (Isles of Cumbrae and Arran). Ireland: Coast of Connemara. Rather rare.

S. tortilis Rke. Coasts of Devon (Plymouth Sound); Yorks Filey, Scarborough); Northumberland (Cullercoats, Berwick). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Kinghorn, Earlsferry, Elie); Moray Firth (Lossiemouth); Orkney Islands (Skaill); Bute (Isles of Arran and Bute). Not uncommon on the coast of Scotland and the North of England.

Gen. 80. Striaria Grev.

S. attenuata Grev. Coasts of Cornwall (Boscastle, Penzance, Falmouth, St. Mawes, Torpoint); Devon (Ilfracombe, Plymouth, Torbay, Sidmouth, Salcombe); Hants (Isle of Wight); Sussex (Pagham, Brighton); Isle of Man. Scotland: Orkney Islands; Argyle (Appin); Bute (Isles of Arran, Cumbrae, and Bute). Ireland: Belfast Lough, Strangford Lough, Roundstone. Rare.—*β crinita* J. Ag. Coast of Cornwall (Boscastle, Bossiney Cove). Ireland (Balbriggan, Co. Dublin). Rare.

Gen. 81. Phæosaccion Farlow.

P. Collinsii Farlow. S.W. coast of Scotland: Bute (Isle of Cumbrae). Very rare.

Gen. 82. Punctaria Grev.

Subgenus 1. Eupunctaria.

P. plantaginea Grev. Coasts of Cornwall (St. Minver, Penzance, Mount's Bay, Falmouth); Devon (Ilfracombe, Plymouth, Torbay, Dawlish); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton); Essex (Harwich); Norfolk (Cromer); Yorks (Filey, Scarborough); Durham (Sunderland); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island, Llangwyfan, Llanvælog). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa, Caroline Park); Fife (Earlsferry, Elie); Forfar (Arbroath); Orkney Islands; Argyle (Oban, Loch Etive, &c.); Bute (Isles of Arran and Cumbrae); Renfrew (Wemyss Bay); Ayr (Portincross, Ardrossan, &c.). Ireland: Belfast, Co. Antrim; Killiney and Kingstown, Co. Dublin; Wicklow. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.—*β Crouani* Thur. Coast of Bute (Isle of Cumbrae).— *γ rubescens* Batt. (= *Punctaria rubescens* J. Ag.; *Homœostroma plantagineum* forma *torta* Holm. & Batt.). Coast of Bute (Isle of Cumbrae); Orkney Islands (Skaill).

P. latifolia Grev. *α genuina* Batt. (= *Homœostroma latifolium* J. Ag. Anal. iii. p. 11). Coasts of Somerset (Minehead); Cornwall (Marazion, Falmouth, Looe); Devon (Bovisand, Meadfoot, Tor Abbey, Sidmouth); Hants (Isle of Wight); Norfolk (Cromer). Scotland: Edinburgh (Joppa); Aberdeen (Peterhead); Orkney Islands (Rousay); Argyle (Islay); Bute (Isles of Arran and Cumbrae). Ireland: Belfast, Co. Antrim; Kilkee, Co. Clare; and West of Ireland generally. Channel Islands (Jersey, Guernsey, Alderney). Not common. — *β lanceolata* Batt. (= *Homœostroma plantagineum* J. Ag. Anal. iii. p. 11). Coasts of Devon (Torbay) and Hants (Isle of Wight).—*γ laminarioides* Holm. & Batt. (= *Nematophlœa latifolia* J. Ag. Anal. iii. p. 16). Coasts of Cornwall (Porthellick Bay and Porth Loo, Scilly) and Devon (Torquay, Sidmouth). Scotland: Bute (Isle of Cumbrae). Rare.

P. tenuissima Grev. (= *P. latifolia* Grev. var. *Zosteræ* Le Jol.; *Diplostromium tenuissimum* Kütz.). Coasts of Dorset (Weymouth); Sussex (Brighton); Isle of Man. Scotland: Fife (Kincraig, Earlsferry, Elie); Orkney Islands (Kirkwall); Argyle (Appin, Loch Etive); Bute (Isles of Arran, Cumbrae, and Bute); Renfrew (Wemyss Bay); Ayr (Largs, Fairlie, Ardrossan). Ireland (Dublin Bay). Locally abundant.

Subgenus 2. Desmotrichum (Kütz.).

P. undulata J. Ag. (= *Desmotrichum undulatum* Rke.). Southern shores of Scotland: Bute (Isles of Cumbrae and Bute); Orkney Islands.

P. baltica Batt. (= *Desmotrichum balticum* Kütz.). Coast of Dorset (Weymouth).

Subgenus 3. Phycolapathum (Kütz.).

P. crispata Batt. (= *Phycolapathum crispatum* Kütz. *P. debile* Kütz. (partim). *Punctaria laminarioides* Crn.). Coast of the Scilly Islands (Bryer, Samson, St. Martin's, Porthellick Bay). Locally abundant.

Fam. Scytosiphonaceæ Thur.

Gen. 83. Phyllitis Kütz.

P. filiformis Batt. Coasts of Hants (Isle of Wight), Essex (Clacton), and Northumberland (Berwick). Probably not uncommon.

P. zosterifolia Rke. Coasts of Northumberland (Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Edinburgh (Joppa); Fife (Kinghorn, Elie); Ayr (Portincross).

P. Fascia Kütz. *α genuina* (= *Laminaria fascia* Harv. et *Phyllitis cæspitosa* Le Jol.). Coasts of Cornwall (St. Minver, Looe); Devon (Torquay, Sidmouth, Salcombe); Dorset (Weymouth); Hants (Isle of Wight); Essex (Leigh); Durham (Sunderland); Northumberland (Whitley, Alnmouth, Holy Island, Berwick). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Joppa, Leith); Fife (Kinghorn, Earlsferry, Elie); Forfar (Arbroath); Kincardine (Stonehaven, Bay of Nigg); Aberdeen (Peterhead); Orkney Islands (Skaill); Argyle (Loch Etive); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Ardrossan, Saltcoats). Ireland (Malahide, Co. Dublin; Carrickfergus and Larne, Co. Antrim; Kilkee, Co. Clare). Channel Islands (Guernsey). Not common.—*β tenuissima* Batt. (= *P. tenuissima* J. Ag.). Coast of Yorks (Flamborough Head); Orkney Islands (Skaill).—*γ debilis* Hauck. Coast of Cornwall (Mousehole, near Penzance). Scotland: Edinburgh (Joppa); Forfar (Arbroath); Bute (Isle of Cumbrae); Hebrides. Rare.

Gen. 84. Scytosiphon Ag.

S. lomentarius J. Ag. (= *Chorda lomentaria* Lyngb.). Coasts of Cornwall (Scilly Islands, St. Minver, Penzance, Mount's Bay, Falmouth, Looe); Devon (Torquay, Dawlish, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Dover, Deal); Essex (Harwich); Yorks (Filey, Scarborough, Whitby); Durham (Sunderland, Hartlepool); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Llangwyfan, Puffin Island). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Earlsferry, Elie, St. Andrew's); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Orkney Islands (Skaill); Argyle (Firth of Lorne, Loch Etive); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Ayr Heads, &c.). Ireland (Wicklow; Kingstown, Co. Dublin; Belfast, Co. Antrim; Milltown Malbay, Co. Clare, &c.). Channel Islands (Jersey, Guernsey, Alderney, Sark). Common and abundant on the shores of the British Islands.—*β zostericola* Thur. Coast of Dorset (Weymouth); Bute (Isle of Cumbrae); Orkney Islands. Not uncommon.

S. pygmæus Rke. Coast of Dorset (Weymouth, Swanage). Rare.

Fam. Asperococcaceæ Farlow.

Gen. 85. Asperococcus Lamour.

A. scaber Kck. Beiträge z. Kenntniss der Meeresalgen, p. 52. Coasts of Dorset (Weymouth, April, 1892) and Bute (Isle of Cumbrae, August, 1891, E. A. B.). Very rare.

A. fistulosus Hooker, Br. Fl. iii. p. 277 (= *Ulva fistulosa* Huds. Fl. Angl. ed. 2, p. 569 (1778); Smith, Eng. Bot. tab. 642 (Sept. 1799), e spec. auth. in Herb. Brit. Mus.; *Conferva echinata* Mert. in Roth, Cat. Bot. iii. p. 170 (1806); *Asperococcus echinatus* Grev. Alg. Br. p. 50, tab. 9 (1830). Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Fowey, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Worthing, Brighton); Kent (Dover); Norfolk (Cromer); Yorks (Filey, Scarborough, Whitby); Durham (Sunderland); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Bangor). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, North Berwick); Edinburgh (Caroline Park); Fife (Kirkcaldy, Earlsferry, Elie); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Moray Firth; Orkney Islands (Skaill); Argyle (Appin, Oban, Campbeltown); Bute (Isles of Arran and Cumbrae); Ayr (Portincross, Ardrossan). Ireland (Belfast, Co. Antrim; Roundstone, Co. Galway; Kilkee, Co. Clare; Bantry, Co. Cork, &c.). Channel Islands (Jersey, Guernsey, Alderney). Common and abundant everywhere on the shores of the British Islands.—*β vermicularis* (Griff.). Coasts of Devon (Torbay, Sidmouth); Hants (Isle of Wight); Durham (Roker); Northumberland (Berwick). Not uncommon.

A. bullosus Lamour. (= *A. Turneri* Hook.). Coasts of Cornwall (Mount's Bay, Falmouth, St. Mawes, Looe); Devon (Torquay, Sidmouth, Salcombe); Dorset (Weymouth, Swanage, Studland); Hants (Isle of Wight); Sussex (Brighton). Scotland: Orkney Islands; Argyle (Appin); Bute (Isles of Arran, Cumbrae, and Bute). Ireland (Bantry, Co. Cork; The Murrough, near Wicklow; Howth, Ireland's Eye, and Lambay Island, Co. Dublin; Strangford Lough, Co. Down; Clew Bay, Co. Mayo; Roundstone Bay, Co. Galway; Dingle and Valentia Harb., Co. Kerry). Channel Islands (Jersey, Guernsey). Locally abundant.

A. compressus Griff. Coasts of Cornwall (Boscastle, Penzance, Marazion, Falmouth, Pridmouth); Devon (Hele, Ilfracombe, Plymouth, Torbay, Sidmouth); Dorset (Weymouth). Scotland (Orkney Islands). Channel Islands (Jersey). Rare.

Gen. 86. Strepsithalia Sauv.

S. Buffhamiana Batt. (= *Streblonema Buffhamiana* Batt.). Coasts of Cornwall (Falmouth) and Dorset (Swanage). Creeping between the cortical filaments of *Mesogloia vermiculata* and *M. Griffithsiana*. Rare.

Gen. 87. Streblonema Derb. & Sol.

S. sphæricum Thur. Coast of Dorset (Weymouth, Swanage). Wales: Anglesea (Llangwyfan). Scotland: Bute; Ayr (Fairlie,

Seamill). Creeping between the cortical filaments of *Mesogloia vermiculata*. Probably not uncommon.

S. volubile Thur. Coasts of Devon (Torquay, Wembury, Teignmouth, Sidmouth) and Dorset (Swanage, Studland). Very rare. Creeping between the cortical filaments of *Dudresnaya verticillata*.

S. tenuissimum Hauck. Coasts of Devon (Meadfoot, Torquay) and Dorset (Swanage). Wales (Anglesea, Llangwyfan). Creeping between the cortical filaments of *Mesogloia Griffithsiana*. Rare.

S. intestinum Holm. & Batt. (= *Entonema intestinum* Reinsch). Coast of Dorset (Weymouth). Immersed in the cortical layers of *Brongniartella byssoides*. Very rare.

S. fasciculatum Thur. Coasts of Dorset (Weymouth) and Northumberland (Berwick). Wales: Anglesea (Llangwyfan). Scotland: Berwicks. (Burnmouth); Bute (Isles of Cumbrae and Bute). Channel Islands (Alderney). Immersed amongst the cortical filaments of *Castagnea virescens*.—*β simplex* Batt. Coasts of Dorset (Swanage) and Bute (Isle of Cumbrae). Immersed between the cortical filaments of *Helminthora divaricata* and *Castagnea virescens*. Rare.

S. infestians Batt. (= *Endodictyon infestians* Gran.). Coast of Hants (Southsea). Endozoic in species of *Alcyonidium*. Rare.

S. æquale Oltm. Coasts of Devon (Teignmouth); Dorset (Swanage); Hants (Isle of Wight). Scotland: Bute (Isle of Cumbrae). Immersed in the cortical layer of *Chorda filum*. Probably not uncommon.

S. Zanardinii (= *Ectocarpus Zanardinii* Crn.). Coasts of Cornwall (Falmouth); Devon (Torquay); Dorset (Swanage, Weymouth); Hants (Isle of Wight). Scotland: Bute (Isle of Cumbrae). Channel Islands (Guernsey). Immersed in the cortical layer of *Chylocladia kaliformis*. Probably not uncommon.

S. ? helophorus (= *Ectocarpus helophorus* Rosenv.). Coasts of Northumberland (Berwick) and Bute (Isle of Cumbrae). Immersed in the fronds of *Petrocelis cruenta*. Rare.

Gen. 88. Ectocarpus Lyngb.

1. *Parasitic Species.*

E. parasiticus Sauv. Coasts of Dorset (Weymouth, Swanage), Sussex (Worthing), Northumberland (Berwick), and Bute (Isle of Cumbrae). Parasitic in the thallus of *Ceramium rubrum* and *Cystoclonium purpurascens*. Probably not uncommon.

E. Stilophoræ Crn. Coasts of Cornwall (Falmouth) and Dorset (Weymouth, Swanage). Parasitic in the fronds of *Stilophora rhizodes*. Rare. — *β cæspitosa* Rosenv. Coast of Dorset (Weymouth, Swanage). Rare. — *γ cervicornis* Batt. Coast of Cornwall (Falmouth). Very rare.

E. clandestinus Sauv. (= *Elachista clandestina* Crn.). Coasts of Devon (Sidmouth) and Northumberland. Parasitic in the thallus of various species of *Fuci*. Very rare.

E. brevis Sauv. Coast of Northumberland (Berwick). Parasitic in the thallus of *Ascophyllum nodosum*. Rare.

E. Valiantei Born. in Journ. de Botanique, vi. 1892. Parasitic in the thallus of *Cystoseira ericoides*. Cobo, Guernsey, July, 1900, Mrs. A. Hamber.

E. luteolus Sauv. Coasts of Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton). Ireland (Dungarvan Bay, Co. Waterford). Parasitic in the thallus of *Fucus vesiculosus*. Probably not uncommon.

E. minimus Näg. Coasts of Kent (Dover) and Northumberland (Berwick). Wales: Carnarvon (Bangor). Ireland (Dungarvan Bay, Co. Waterford). Parasitic in the receptacles of *Himanthalia lorea*. Very rare.

E. microscopicus Batt. (= *Cylindrocarpus microscopicus* Crn. in Ann. Sc. Nat. iii. sér. vol. xv. p. 359, pl. 16, figs. 1–11 (1851); *Streblonema investiens* Thur. in Lloyd, Algues de l'Ouest de la France, No. 281 (1859); *E. investiens* Hauck). Coast of Dorset (Weymouth, Portland, Studland). Parasitic in the thallus of *Gracilaria compressa*. Rare.

E. microspongium Batt. Coast of Devon (Plymouth Sound). On *Ralfsia verrucosa*. Very rare.

E. tomentosoides Farlow. Coast of Dorset (Weymouth). Wales: Carnarvon (Bangor, Menai Straits, Anglesea, Towyn-y-Capel). Scotland: Bute (Isle of Cumbrae). On *Laminaria saccharina*. Rare. — *β punctiformis* Batt. (= *Ascocyclus balticus* Jack in Journ. Bot. 1890, p. 12, non Rke.). Coasts of Cornwall (Mousehole, near Penzance); Dorset (Weymouth); Northumberland (Berwick). Scotland: Forfar (Arbroath); Kincardine (Stonehaven); Bute (Isle of Cumbrae). Rare.

E. velutinus Kütz. (= *Elachista velutina* Phyc. Br.). Coasts of Cornwall (Mount's Bay, Fowey, Looe); Devon (Sidmouth); Sussex (Brighton); Kent (Deal); Norfolk (Cromer); Northumberland (Newbiggen, Holy Island, Berwick). Wales: Anglesea (Puffin Island, Towyn-y-Capel). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Fife (Elie, Pittenweem, Kilrenny); Forfar (Arbroath); Kincardine (Cove); Orkney Islands (North Ronaldshay); Argyle (Appin). Ireland (Bantry Bay, Co. Cork; Roundstone, Co. Galway, &c.). Channel Islands (Guernsey, Jersey). On the receptacles of *Himanthalia lorea*. Not uncommon. — *β laterifructus* Batt. Coast of Devon (Plymouth Sound). Very rare.

E. Battersii Born. (= *E. parvulus* Holm. & Batt. Rev. List, non Kütz.). Coast of Devon (Sidmouth). On *Taonia atomaria*. Very rare.

E. solitarius Sauv. Coasts of Devon (Sidmouth) and Dorset (Swanage). Ireland (Dungarvan Bay, Co. Waterford). On *Dictyota dichotoma* and *D. ligulata*. Rare.

E. simplex Crn. Coasts of Cornwall (Trevone, Lizard, Falmouth, Fowey); Devon (Mudstone Bay, Brixham, Sidmouth). Scotland: Bute (Isle of Arran). Ireland (Bantry Bay, Castletown, and Bear Haven, Co. Cork; Gleninagh and Kilkee, Co. Clare). On *Codium tomentosum*. Not uncommon.

2. *Non-parasitic Species.*

E. repens Rke. (= *E. reptans* Holmes, Fasc. no. 35, non Crn.). Coasts of Cornwall (Trebarwith, Falmouth, Pridmouth, Fowey); Devon (Exmouth, Sidmouth); Dorset (Weymouth, Swanage); Northumberland (Berwick). Ireland (Dungarvan Bay, Co. Water-

ford). Rare. — *β confluens* Batt. (= *Ascocyclus reptans* Holmes, Fasc. no. 102 (partim)). Coast of Northumberland (Berwick). On *Chondrus crispus* and *Halidrys siliquosa*. Rare.

E. terminalis Kütz. Coasts of Cornwall (Bude, Trevone Bay, Newquay, Fowey, Looe); Devon (Sidmouth); Dorset (Weymouth); Northumberland (Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Orkney Islands (N. Ronaldshay); Argyle (Loch Etive); Bute (Isles of Arran and Cumbrae). Not uncommon.

E. erectus Kütz. Tab. Phyc. vol. v. Coasts of Essex (Clacton, Jan. 1893, E. A. B.) and Northumberland (Berwick, Oct. 1889, E. A. B.). Very rare.

E. Holmesii Batt. Coasts of Somerset (Minehead), Devon (Ilfracombe, Torquay, Sidmouth), and Northumberland (Berwick). Wales (Isle of Anglesea). Rare.

E. globifer Kütz. (= *E. insignis* Crn.). Coasts of Cornwall (Falmouth, Pridmouth); Devon (Sidmouth); Dorset (Smallmouth, near Weymouth). Scotland: Haddington (Dunbar); Bute (Isle of Arran); Ayr (Seamill). Rather rare. — *β rupestris* Batt. (= *E. cæspitulus* Holm. Fasc. no. 62, non J. Ag.; et *E. simpliciusculus* Ralfs in Trans. Penzance Nat. Hist. Soc. 1884, p. 324). Coasts of Cornwall (Boscastle, St. Minver, Newquay, Mount's Bay); Devon (Ladran Bay, Sidmouth); Northumberland (Berwick). Scotland: Haddington (Dunbar). Rare.

E. irregularis Kütz. Coasts of Sussex (Bognor) and Ayr (Seamill). Very rare.

E. Sandrianus Zan. (= *E. elegans* Thur.). Coasts of Cornwall (Falmouth, Pridmouth); Devon (Ilfracombe, Saunton); Dorset (Studland). Scotland: Bute (Isle of Arran); Ayr (Ardrossan). Very rare.

E. Mitchellæ Harv. (= *E. virescens* Thur.). Coasts of Devon (Paignton, Torquay, Dawlish) and Dorset (Weymouth, Swanage). Channel Islands (Guernsey). Rare.

E. Crouani Thur. Coasts of Cornwall (Boscastle); Devon (Elberry Cove, Torquay; Brixham, Sidmouth); Essex (between Harwich and Dovercourt). Scotland: Bute (Isle of Cumbrae). Rare.

E. confervoides Le Jol. Coasts of Cornwall (Padstow, Penzance, Falmouth); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Sussex (Bognor); Essex (Harwich, Dovercourt); Yorks (Filey, Whitby); Northumberland (Holy Island, Berwick). Wales (Menai Straits). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar, North Berwick); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Orkney Islands; Argyle (Loch Goil); Bute (Isles of Arran, Bute, and Cumbrae); Renfrew (Gourock). Ireland generally. Channel Islands (Jersey, Guernsey, Alderney). Common and abundant.—*β arctus* Kjellm. (= *E. arctus* Kütz. et *E. pseudosiliculosus* Crn.). Coasts of Cornwall (Scilly Islands, Mount Edgcumbe); Devon (Torquay); Dorset (Weymouth, Swanage). Scotland: Bute (Isle of Cumbrae); Ayr (Fairlie, Saltcoats). Channel Islands (Alderney). Not uncommon

on the leaves of *Zostera marina*.— β *penicilliformis* Kuck. Coast of Devon (Sidmouth, Torquay).

E. siliculosus Kütz. α *typica* Kjellm. Coasts of Cornwall (St. Minver, Falmouth, Looe); Devon (Torbay, Sidmouth); Dorset (Weymouth, Swanage): Hants (Isle of Wight); Sussex (Bognor, Brighton); Kent (Deal); Essex (Harwich); Norfolk (Cromer); Yorks (Filey, Scarborough, Whitby); Durham (Seaton Carew, Hartlepool); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (New Brighton, Hilbre Island); Isle of Man. Wales (Anglesea, Puffin Island). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Orkney Islands; Argyle (Oban, Loch Goil); Bute (Isles of Cumbrae and Arran); Renfrew (Gourock); Ayr (Ardrossan). Irish coasts generally. Channel Islands (Jersey, Guernsey, Alderney). Common and abundant everywhere on the shores of the British Islands. — β *spalatina* Kjellm. (= *E. myriocarpus* Tellam in Trans. Penzance Nat. Hist. Soc., New Series, vol. iii. p. 378 ?). Coasts of Cornwall (Boscastle, Fowey, St. Michael's Mount); Devon (Sidmouth; Dorset (Weymouth). Probably not uncommon.—γ *longipes* Harv. Coasts of Jersey and Cornwall (St. Minver, Fowey).— δ *hiemalis* Kuck. (= *E. hiemalis* Crn.). Coasts of Cornwall (Padstow); Devon (Teignmouth); Dorset (Weymouth); Sussex (Bognor). Scotland: Haddington (Dunbar). Rare.—ε *subulatus* Hauck (= *E. amphibius* Harv.). Coasts of Gloucester (River Avon below Bristol); Essex (between Harwich and Dovercourt); Norfolk (Cley). Rare.

E. penicillatus Ag. Coasts of Devon (Plymouth, Torquay); Dorset (Swanage). Scotland: Bute (Isle of Cumbrae). Rare.

E. dasycarpus Kuck. Coast of Dorset (Swanage). Rare.

E. fasciculatus Harv. α *typica*. Coasts of Cornwall (Mount's Bay, Fowey, Looe); Devon (Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Norfolk (Cromer); Yorks (Scarborough, Whitby); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island). Wales: Anglesea (Puffin Island). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa, Caroline Park); Fife (Kinghorn, Earlsferry, Elie); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Orkney Islands; Dumbarton (Helensburgh); Bute (Isle of Cumbrae); Ayr (Portincross, W. Kilbride). Ireland (Maugan's Bay, Co. Waterford; Strangford Lough, Co. Down, &c., not uncommon). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon. — β *congesta* (Crn.) (= *E. congestus* Crn. and *E. glomeratus* Thur.). Coasts of Cornwall (Lizard) and Dorset (Swanage). Scotland (Orkney Islands). Rather rare. — γ *draparnaldioides* Crn. Coasts of Cornwall (Falmouth); Devon (Sidmouth); Dorset (Weymouth); Northumberland (Holy Island, Berwick); Scotland (Orkney Islands). Not uncommon.—δ *pygmæus* Batt. (= *E. pygmæus* Aresch. ?) Coasts of Bute. Rare.

E. tomentosus Lyngb. Coasts of Cornwall (St. Minver, Penzance, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torbay,

Ilfracombe); Dorset (Weymouth, Studland); Hants (Isle of Wight); Sussex (Brighton, Eastbourne); Kent (Dover); Essex (Harwich, Waton Creek); Norfolk (Cromer); Yorks (Filey, Scarborough, Whitby); Durham (Roker, Marsdon); Northumberland (Cullercoats, Alnmouth, Berwick); Cheshire (Hilbre Island, New Brighton); Isle of Man. Wales (Puffin Island, Anglesea, Menai Straits). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Joppa); Fife (Elie, Pittenweem, Anstruther); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Moray Firth; Orkney Islands; Argyle (Kirn); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Saltcoats). Ireland (Bantry Bay, Co. Cork; Ardmore Bay, Co. Waterford, &c.; widely distributed and abundant in spring and early summer). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

E. oratus Kjellm. Coasts of Bute (Isles of Cumbrae and Arran). Rare.—*β arachnoideus* Rke. Coast of Devon (Ilfracombe). Rare.

E. Hincksiæ Harv. Coasts of Cornwall (Mount's Bay, Falmouth, Fowey, Looe); Devon (Ilfracombe, Plymouth, Exmouth); Dorset (Weymouth, Durlston Head, Swanage); Sussex (Brighton); Yorks (Filey). Wales (Anglesea, Towyn-y-Capel). Scotland: Kincardine (Bay of Nigg); Aberdeen (Peterhead, Aberdeen); Moray Firth; Caithness (Wick); Orkney Islands; Bute (Cumbrae); Ayrshire. Ireland (Ballycastle Bay, Co. Antrim, &c.). Not common.

E. Reinboldii Rke. Coast of Dorset (Weymouth). Very rare.

E. distortus Carm. Coasts of Argyle (Appin); Bute (Isles of Cumbrae and Arran); Ayr (Saltcoats, Ardrossan); Moray Firth (Campbeltown). Very rare. N.B.—This species has also been recorded from Torbay and Filey, but it is probable that some variety of *Pylaiella litoralis* was mistaken for it.

E. Landsburgii Harv. S.W. coast of Scotland: Argyle (Kyles of Bute); Bute (Isles of Cumbrae and Arran); Ayr (Largs, Ardrossan). Ireland (Roundstone Bay, Co. Galway). Very rare. N.B.—In his *Monograph of the Algæ of the Firth of Forth*, the late Mr. G. W. Traill states that this species was found at "Largo by Dr. Landsborough in August, 1853." This is a mistake; the specimens referred to were gathered at Largs, Ayrshire, not Largo, Fife, as is evident from one of the specimens now before me. The species has also been recorded from Sidmouth, but it is very doubtful whether the specimen was correctly identified.

E. acanthophorus Kütz. Coast of Dorset (Weymouth). Very rare.

E. granulosus Ag. Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Fowey); Devon (Ilfracombe, Plymouth, Exmouth, Sidmouth); Dorset (Weymouth, Portland, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Deal); Essex (Harwich, Dovercourt); Norfolk (Cromer); Yorks (Filey, Whitby); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (New Brighton, Hilbre Island). Wales: Carnarvon (Bangor); Anglesea (Puffin Island). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa, Caroline Park); Fife (Kinghorn, Earlsferry, Elie, St. Andrew's); Forfar (Arbroath); Kincardine

(Stonehaven, Torry); Aberdeen (Peterhead); Orkney Islands; Argyle (Appin, Falls of Lora, Firth of Lorne); Bute (Isles of Arran and Cumbrae); Renfrew (Gourock); Ayr (Ardrossan). Ireland (Bantry Bay, Co. Cork; Maugan's Bay, Co. Waterford; Kilkee and Spanish Point, Co. Clare; Belfast Lough, Ballycastle, Co. Antrim, &c.). Channel Islands (Jersey, Guernsey, Alderney, Sark). Common and abundant on most of the shores of the British Islands. — *β tesselatus* Harv. Coasts of Devon (Torquay); Dorset (Weymouth); Yorks (Filey); Northumberland (Berwick). Scotland (Joppa, Co. Edinburgh). Not uncommon. — *γ refracta*. Coast of Devon (Teignmouth). Scotland (Isle of Cumbrae and Irvine, Ayrshire). Rare.

E. secundus Kütz. Coasts of Devon (Torquay); Dorset (Weymouth). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie, Earlsferry, Kinghorn); Bute (Isle of Cumbrae); Ayr (Fairlie). Ireland (Bantry Bay, Co. Cork). Rare.

E. fenestratus Berk. Coasts of Cornwall (Bude); Devon (Plymouth, Salcombe); Sussex (Brighton); Northumberland (Whitley). Very rare.

E. Lebelii Crn. (= *E. fenestratus* Holm. & Batt. Rev. List, Appendix). Coasts of Devon (Sidmouth) and Dorset (Swanage). Rare.

E. Padinæ Sauv. (= *Giffordia Padinæ* Buffham). Coast of Devon (Exmouth, Ladran Bay, Sidmouth). Rare.

Gen. 89. Sorocarpus Pringsh.

S. uvæformis Pringsh. Coast of Dorset (Weymouth). Scotland: Bute (Isle of Cumbrae); Renfrew (Gourock). Very rare.

Gen. 90. Pylaiella Bory.

P. litoralis Kjellm. *α opposita*, f. *typica* Kjellm. Coasts of Cornwall (Falmouth); Devon (Torquay, Sidmouth); Dorset (Weymouth); Northumberland (Berwick).—f. *subglobosa* Kuck. Devon (Torquay); Dorset (Weymouth, Swanage); Northumberland (Berwick). —f. *rupincola* Kjellm. Northumberland (Berwick).—f. *brachiata* Batt. (= *Conferva brachiata*, Sm. Eng. Bot. pl. 2571; *Ectocarpus brachiatus*, Harv. in Hook. Br. Fl. ii. p. 327, sed non Harv. Phyc. Br.). Coast of Norfolk (Cley, Caistor). Rare.—f. *longifructus* Batt. (= *Ect. longifructus* Harv. Phyc. Br. pl. 258). Coasts of Devon (Plymouth Hoe); Durham (Sunderland); Northumberland (Berwick). Scotland: Haddington (Dunbar); Orkney Islands (Skaill); Bute (Isle of Cumbrae); Ayr (Saltcoats). Rare.—*β firma*, f. *typica* Kjellm. (= *E. litoralis* Wyatt Alg. Daum. no. 129). Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Looe, Whitsand Bay); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Dorset (Weymouth, Portland, Swanage); Hants (Isle of Wight); Sussex (Bognor, Worthing, Brighton); Kent (Dover, Deal); Essex (Clacton, Dovercourt, Harwich); Suffolk (Felixstowe); Norfolk (Yarmouth, Cromer); Yorks. (Filey, Scarborough, Whitby); Durham (Sunderland); Northumberland (Alnmouth, Holy Island, Berwick); Isle of Man. Wales: Carnarvon (Bangor); Anglesea (Puffin Island). Scotland: Berwicks. (Burnmouth, Eyemouth);

Haddington (Dunbar, North Berwick): Edinburgh (Joppa); Fife (Kinghorn, Earlsferry, Elie); Forfar (Arbroath); Aberdeen; Kincardine (Stonehaven); Orkney Islands; Argyle (Oban, Appin, &c.); Bute (Isles of Arran and Cumbrae); Renfrew (Gourock); Dumbarton (Gare Loch); Ayr (Ardrossan). Ireland: Generally distributed. Channel Islands (Jersey, Guernsey, &c.). Common and abundant.—f. *parvula* Kjellm. Devon (Sidmouth). Rare. —γ *divaricata* Kjellm., f. *typica* Kjellm. (= *E. compacta* Auct.). Dorset (Weymouth, &c.); Northumberland (Berwick).—f. *ramellosa* Kuck (= *E. ramellosus*). Cornwall (Padstow). — δ *varia* Kuck (= *P. varia* Kjellm.). Coasts of Ross-shire (Invergordon), Bute (Isles of Cumbrae and Bute), Ayr (Saltcoats). Rare.

Gen. 91. Isthmoplea Kjellm.

I. sphærophora Kjellm. (= *Ectocarpus sphærophorus* Carm.). Coasts of Cornwall (Trevone, Mount's Bay, Land's End, Falmouth, Looe, Cawsand Bay); Devon (Wildersmouth, Ilfracombe, Bovisand, Plymouth, near Wembury, Torquay, Sidmouth); Dorset (Weymouth); Yorks. (Filey); Durham (Seaham Harbour, Ryhope, Hendon, Marsden); Northumberland (Cullercoats, Whitley, Hartley, Alnmouth, Berwick). Wales: Carnarvon (Menai Bridge); Anglesea (Puffin Island); Pembroke (Milford Haven). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Joppa, Caroline Park); Fife (Aberdour, Kinghorn, Earlsferry, Elie, Pittenweem); Forfar (Arbroath); Kincardine (Girdleness, Bay of Nigg); Aberdeen (Peterhead); Moray Firth; Orkney Islands; Argyle (Appin); Bute (Isles of Arran and Cumbrae); Ayr (Portincross). Ireland: Bantry Bay, Co. Cork. Not common.

Gen. 92. Myriotrichia Harv.

M. clavæformis Harv. Coasts of Cornwall (Mount's Bay, Falmouth, Looe); Devon (Plymouth, Paignton, Torbay, Sidmouth); Dorset (Swanage); Yorks. (Scarborough); Northumberland (Alnmouth, Holy Island, Berwick); Isle of Man; Cheshire (Hilbre Island). Wales: Anglesea (Llangwyfan). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, North Berwick); Edinburgh (Caroline Park); Fife (Kinghorn, Earlsferry, Elie, Pittenweem, Kilrenny); Forfar (Arbroath); Kincardine (Girdleness); Orkney Islands (Papa Westra); Bute (Isles of Arran and Cumbrae); Ayr (Ballantrae). Ireland: Bantry Bay and Cable Island, near Youghal, Co. Cork; Howth and Balbriggan, Co. Dublin; Belfast and North of Ireland generally. Channel Islands (Jersey). Not uncommon.—Var. *minima* Holm. et Batt. in Holm. Fasc. no. 167. Coasts of Devon (Torquay) and Dorset (Swanage). Rare.

M. filiformis Harv. Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torbay); Norfolk (Cromer); Yorks. (Filey, Scarborough); Northumberland (Cullercoats, St. Mary's Island, Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island). Wales: Anglesea (Llangwyfan). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Fife (Kinghorn, Earlsferry, Elie, Pittenweem, &c.); Forfar (Arbroath): Kincardine

(Bay of Nigg); Aberdeen (Peterhead); Orkney Islands; Argyle (Oban); Bute (Isles of Arran, Cumbrae, and Bute). Ireland (Youghal, Co. Cork; Kilkee, Co. Clare, &c.). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

M. densa Batt. Coasts of Cornwall (Scilly Islands) and Dorset (Weymouth, Swanage). Scotland: Bute (Isles of Arran and Cumbrae). Rare.

M. repens Hauck. (= *Dichosporangium repens* Hauck). Coasts of Cornwall (Falmouth); Devon (Wembury); Dorset (Swanage). Scotland: Elgin (Lossiemouth). Rare.

Fam. Arthrocladiaceæ Thur.

Gen. 93. Arthrocladia Duby.

A. villosa Duby. Coasts of Somerset (Minehead); Cornwall (St. Minver, Mount's Bay, Gerrans Bay, Torpoint); Devon (Plymouth, Torquay, Exmouth, Ladran Bay, Sidmouth); Dorset (Weymouth, Swanage, Studland); Hants (Isle of Wight); Sussex (Brighton, Hastings); Suffolk (Corton); Norfolk (Yarmouth, Cromer). Wales: Anglesea; Carnarvon (Bangor); Glamorgan (Swansea, Mumbles). Scotland: Haddington (Prestonpans); Orkney Islands (Kirkwall); Argyle (Ardthur, Appin); Bute (Isles of Arran and Cumbrae). Ireland: Wicklow; Malahide, Co. Dublin; Carrickfergus, Co. Antrim. Channel Islands (Jersey). Rather rare generally, but abundant in a few localities.

Fam. Elachistaceæ Rke.

Gen. 94. Myriactis Kütz.

M. pulvinata Kütz. (= *Elachistea attenuata* Harv. Phyc. Br. pl. 28A). Coasts of Cornwall (St. Minver, Trevone, Penzance, Falmouth, Looe); Devon (Elberry Cove, Torquay, Plymouth, Sidmouth); Dorset (Weymouth, Swanage); Yorks. (Scarborough, on *Halidrys*). Scotland: Bute (Isle of Cumbrae, on *Halidrys*). Ireland: Bantry Bay, Co. Cork; Miltown Malbay, Co. Clare; and West Coast generally. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

M. Areschougii Batt. (= *Elachista Areschougii* Crn.). Coasts of Northumberland (Berwick). Scotland: Haddington (Dunbar); Bute (Isle of Cumbrae). Ireland: Murlough Bay, Co. Antrim. Rare.

M. stellulata Batt. (*Elachista stellulata* Griff.). Coasts of Cornwall (Falmouth, St. Mawes); Devon (Torquay); Dorset (Weymouth, Swanage). Scotland: Bute (Isles of Arran and Cumbrae); Ayr (Portincross). Channel Islands (Jersey, Guernsey).

M. Haydeni Batt. (*Elachista Haydeni* Gatty, et *El. moniliformis* Foslie). Coasts of Yorks. (Filey); Northumberland (Berwick); Cheshire (Hilbre Island). Rare.

Gen. 95. Elachistea Duby.

E. stellaris Aresch. *a typica* (epiphytic on *Arthrocladia villosa*). Coasts of Devon (Torquay, Sidmouth); Dorset (Weymouth). Wales. —*β Chordæ* Aresch. (epiphytic on *Chorda filum*, *Asperococcus*

bullosus, *Cutleria multifida*, *Spermatochnus paradoxus*, *Mesogloia Griffithsiana*, &c.). Coasts of Dorset (Weymouth, Swanage); Hants (Isle of Wight). Scotland: Orkney Islands. Rare.

E. fucicola Fries. Coasts of Cornwall (St. Minver, Padstow, Mount's Bay, Falmouth, Fowey, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Deal); Essex (Clacton, Maldon); Norfolk (Cromer); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Alnmouth, Berwick); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Bangor). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Earlsferry, Elie); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen; Moray Firth; Orkney Islands; Argyle (Oban, Appin); Dumbarton (Gare Loch); Renfrew (Wemyss Bay); Bute (Isles of Arran and Cumbrae); Ayr (Ayrheads). Ireland generally. Channel Islands (Jersey, Guernsey, Alderney). Common and abundant everywhere on the coasts of the British Islands.

E. Grevillei Arnott. Coasts of Northumberland (Berwick). Scotland: Haddington (Dunbar); Bute (Isles of Arran and Cumbrae); Ayr (Largs, Seamill).

E. flaccida Aresch. (incl. *E. curta* Aresch.). Coasts of Cornwall (Trevone Bay, St. Minver, Mount's Bay, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth); Northumberland (Berwick, growing on *Halidrys*). Wales: Anglesea (Penmon Point); Glamorgan (Swansea). Scotland: Haddington (Dunbar); Fife (Earlsferry, Elie). Ireland generally. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

E. scutulata Duby. Coasts of Cornwall (Mount's Bay, Falmouth, Fowey, Looe); Devon (Plymouth, Torquay, &c.); Dorset (Durlston Head, Swanage); Sussex (Shoreham, Brighton); Kent (Deal); Norfolk (Cromer); Yorks. (Scarborough); Northumberland (Newbiggen, Berwick, Holy Island); Isle of Man. Wales: Anglesea (Towyn-y-Capel). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Fife (Elie, Pittenweem); Orkney Islands. Ireland generally. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

Gen. 96. Leptonema Reinke.

L. fasciculatum Rke. Var. *subcylindrica* Rosenv. Coasts of Carnarvon (Bangor) and Southern Scotland; Bute (Isle of Cumbrae). Very rare. — Var. *uncinatum* Rke. Coast of Renfrew (Gourock). Very rare.

Gen. 97. Halothrix Rke.

H. lumbricalis Rke. Coasts of Dorset (Weymouth) and Southern Scotland: Bute (Isle of Cumbrae); Ayr (Fairlie). Rare.

Gen. 98. Giraudia Derb. et Sol.

G. sphacelarioides Derb. et Sol. Coast of Dorset (Weymouth, Swanage, Studland) and Hants (Shanklin, I.W.). Ireland (Roundstone Bay, Co. Galway). Rare.

Fam. Sphacelariaceæ J. Ag.

α Sphacelariaceæ crustaceæ.

Gen. 99. Battersia Rke.

B. mirabilis Rke. Coast of Northumberland (Spittal, Berwick). Very rare.

β Sphacelariaceæ genuinæ.

Gen. 100. Sphacella Rke.

S. subtilissima Rke. Coast of Devon (Plymouth). Very rare.

Gen. 101. Sphacelaria Lyngb.

S. radicans Harv. Coasts of Cornwall (St. Michael's Mount, Sennen Cove, Par, Pridmouth); Devon (Watermouth, Ilfracombe, Torbay); Dorset (Swanage); Sussex (Brighton); Durham (Seaton Carew, Ryhope, &c.); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (New Brighton, Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Bangor). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa, Leith); Fife (Kinghorn, Earlsferry, Elie, Pittenweem, Kilrenny); Forfar (Arbroath); Kincardine (Stonehaven, Girdleness); Orkney Islands; Argyle (Appin); Bute (Arran, Cumbrae). Ireland (Bantry Bay, Co. Cork; Dunmore, Co. Waterford). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

S. olivacea Pringsh. Coasts of Cornwall (Par, Pridmouth); Devon (Ladran Bay, Sidmouth); Northumberland (Holy Island, Berwick). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie); Forfar (Arbroath); Orkney Islands (Papa Westra); Bute (Isles of Arran and Cumbrae). Ireland (Dunmore, Co. Waterford). Channel Islands (Guernsey, Alderney). Rather rare.

S. racemosa Grev. Coasts of Northumberland (Berwick); Edinburgh (Caroline Park); Bute (Arran and Cumbrae). Very rare.

S. tribuloides Menegh. Southern shores of Scotland: Haddington (Dunbar). Very rare.

S. furcigera Kütz. *β saxatilis* Kck. Coast of Dorset (Swanage). Very rare.

S. cirrhosa Ag. *α pennata* Hauck. Coasts of Cornwall (St. Minver, Trevone, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torbay, Dawlish, Sidmouth); Dorset (Weymouth, Swanage, Studland); Hants (Isle of Wight); Sussex (Bognor, Worthing, Brighton); Kent (Dover, Deal); Norfolk (Yarmouth, Cromer); Yorks. (Scarborough); Durham (Marsden, Whitburn, Sunderland); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (Eastham, Hilbre Island); Isle of Man. Wales (Isle of Anglesea, Puffin Island); Carnarvon (Swillies). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, North Berwick); Edinburgh (Joppa, Caroline Park); Fife (Earlsferry, Elie, Pittenweem); Forfar (Arbroath); Kincardine (Stonehaven, Girdleness); Aberdeen (Peterhead); Moray Firth; Orkney Islands; Argyle (Oban, Appin, Loch Goil); Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats, Ardrossan, Fairlie, Girvan). Ireland generally. Channel Islands

(Jersey, Guernsey, Alderney). Common and abundant.—*β irregularis* Hauck. Coasts of Dorset (Weymouth, Swanage) and Hants (Isle of Wight). Rather rare.—*γ patentissima* Grev. Coasts of Dorset (Weymouth), Sussex (Bognor), and Bute. Rather rare.—*δ fusca* Holm. et Batt. (= *S. fusca* Harv.). Coasts of Cornwall (Padstow, Pentire, St. Minver, St. Michael's Mount); Devon (Ilfracombe, Paignton, Torquay, Sidmouth); Norfolk (Cley); Durham (Seaham Harbour). Wales: Anglesea (Worms Head); Glamorganshire (Newton Nottage). Rather rare.—*ε ægagropila* Griff. Coasts of Devon (Torquay, Sidmouth); Northumberland (Holy Island); Hants (Isle of Wight). Scotland: Bute (Isle of Cumbrae); Ayr (Fairlie, Heads of Ayr). West Coast of Ireland. Not uncommon. —*ζ nana* Griff. Devon (Torquay); Hants (Isle of Wight); Sussex (Bognor). Rather rare.

S. cæspitula Lyngb. Coasts of Northumberland (Berwick) and Carnarvon (Bangor). Very rare.

S. plumula Zan. (= *S. pseudoplumosa* Holm. Fasc. no. 24). Coasts of Cornwall (Gyllingvase Beach and Harbour, Falmouth, Pridmouth); Dorset (Weymouth, Smallmouth); Sussex (Brighton). Scotland: Lamlash Bay, Isle of Arran.

S. plumigera Holmes (*S. plumosa* Harv. Phyc. Br. pl. 87 pro parte). Coasts of Devon (Ilfracombe); Hants (Isle of Wight); Sussex (Brighton, Beachy Head, Eastbourne); Kent (Folkestone, Herne Bay); Essex (Harwich, Dovercourt); Suffolk (Felixstowe); Durham (Ryhope, Sunderland, Roker, Marsden); Northumberland (Cullercoats); Lancs. (Addingham, Walney Island). Wales: Carnarvon (Menai Straits, Bangor). Scotland: Haddington (Longniddry); Edinburgh (Joppa, Caroline Park); Fife (Elie, St. Andrews); Orkney Islands; Bute (Isles of Arran and Cumbrae); Ayr (Portincross, Ardrossan). Rather rare generally, but locally abundant. Ireland (Balbriggan and Howth, Co. Dublin).

Gen. 102. Chætopteris Kütz.

Ch. plumosa Kütz. (= *Sphacelaria plumosa* Harv. pro parte. *Cladostephus plumosus* Holmes). Coasts of Northumberland (Alnmouth, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Kinghorn, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven, Bay of Nigg); Aberdeen (Peterhead); Banff (Macduff); Orkney Islands (Kirkwall); Argyle (Firth of Lorne); Bute (Isle of Arran and Cumbrae); Ayr (Portincross, W. Kilbride, Ardrossan). Ireland (Wicklow, Portaferry, Co. Down). Rather rare.

Gen. 103. Cladostephus Ag.

C. spongiosus Ag. Coasts of Cornwall (St. Minver, Padstow, Mount's Bay, Falmouth); Devon (Plymouth, Torquay, Dawlish, Sidmouth); Hants (Isle of Wight); Sussex (Bognor, Worthing, Brighton); Kent (Deal, Ramsgate); Essex (Harwich); Suffolk (Felixstowe); Norfolk (Yarmouth, Cromer); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Menai

Straits). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, Longniddry); Edinburgh (Joppa); Fife (Earlsferry, Elie, Pittenweem); Forfar (Arbroath); Kincardine (Stonehaven, Girdleness); Aberdeen (Peterhead); Moray Firth; Orkney Islands; Argyle (Oban, Loch Goil); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Ardrossan, Heads of Ayr). Irish coasts generally. Channel Islands (Jersey, Guernsey, Alderney). Common.

C. verticillatus Ag. Coasts of Cornwall (St. Minver, Padstow, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton); Essex (Walton); Suffolk (Felixstowe); Norfolk (Yarmouth, Cromer); Yorks. (Filey, Scarborough); Durham (Roker); Northumberland (Whitley, Holy Island); Isle of Man (Porthdinlleyn Bay). Wales: Anglesea (Llangwyfan, Puffin Island). Scotland: Fife (Elie); Forfar (Arbroath); Kincardine (Girdleness); Aberdeen (Peterhead); Orkney Islands; Bute (Isles of Arran and Cumbrae); Ayr (Girvan). Ireland (Roundstone, Co. Galway; Wicklow, &c.). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

Gen. 104. Halopteris Kütz.

H. filicina Kütz. (= *Sphacelaria filicina* Ag.). Coasts of Cornwall (St. Minver, Trevone, Mount's Bay, Falmouth); Devon (Hele, Ilfracombe, Plymouth, Littleham Cove, Exmouth, Salcombe); Hants (Isle of Wight); Durham (Seaham Harbour (extinct?); Isle of Man. Wales: Anglesea (Holyhead). Scotland: Argyleshire (Island of Eilan Dubh). Ireland (Youghal and Kinsale Harbour, Co. Cork; Belfast Bay; Bangor, Co. Down). Channel Islands (Jersey, Guernsey). Rare.—*β sertularia* (Bonnem.) (= *H. filicina* Kütz. *β patens* Harv.). Coasts of Devon (Torbay); Dorset (Weymouth); Hants (Isle of Wight); Sussex (Bognor, Brighton). Ireland (Belfast Lough; Carrickfergus, Co. Antrim; Roundstone Bay, Co. Galway). Channel Islands (Jersey, Guernsey). Very rare.

Gen. 105. Stypocaulon Kütz.

S. scoparium Kütz. (= *Sphacelaria scoparia* Ag.) *α typica*. Coasts of Cornwall (St. Minver, Trevone, Scilly Islands, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Worthing, Brighton); Kent (Dover, Deal, Margate); Essex (Walton); Norfolk (Yarmouth, Cromer); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Menai Straits). Scotland: Fife (Elie, Chapelness, Earlsferry); Forfar (Arbroath); Bute (Isles of Arran, Cumbrae, and Bute); Ayrshire. Not uncommon on the coasts of Ireland. Channel Islands (Jersey, Guernsey, Alderney). Common on the southern shores of England; local and scarce on those of Scotland and Northern England.—*β scoparioides* Holm. & Batt. (= *Sphacelaria scoparioides* Ag.). Coasts of Dorset (Weymouth) and Sussex (Bognor, Worthing). Ireland: Roundstone Bay, Co. Galway. Rare.

Fam. Myrionemaceæ Thur.

Gen. 106. Myrionema Grev.

M. strangulans Grev. *α typica* Batt. Coasts of Cornwall (St. Minver, Trevone, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Portland, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton); Kent (Folkestone, Dover); Essex (Clacton); Yorks. (Filey, Scarborough, Whitby); Northumberland (Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Carnarvon (Bangor); Anglesea (Towyn-y-Capel, Puffin Island). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar, Longniddry); Edinburgh (Joppa); Fife (Elie, Kincraig, Pittenweem); Forfar (Arbroath); Kincardineshire; Aberdeen; Orkney Islands; Argyle (Loch Etive); Bute (Isles of Arran and Cumbrae). Ireland. Channel Islands (Jersey, Alderney, Guernsey). Common everywhere along the coasts of the British Islands. — *β punctiforme* Holm. & Batt. (= *M. punctiforme* Harv. et *M. intermedium* Foslie). Coasts of Cornwall (Trevone, Falmouth, Looe); Devon (Torbay); Yorks. (Scarborough, Filey); Durham (Seaham Harbour); Northumberland (Berwick); Cheshire (Hilbre Island). Scotland: Haddington (Dunbar); Forfar (Arbroath); Orkney Islands (Skaill, Ronsay); Argyle (Appin, Loch Etive). Ireland. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

M. polycladum Sauv. Coast of Dorset (Swanage). Probably not uncommon.

M. Corunnæ Sauv. (= *Ascocyclus fœcundus* var. *seriatus* et *A. balticus* Batt. in Journ. Bot. 1892, p. 174). Coasts of Dorset (Durlston Head, Swanage); Cheshire (Hilbre Island). Scotland: Bute (Isles of Bute, Cumbrae, and Arran). Not uncommon.

M. papillosum Sauv. Coast of Dorset (Weymouth, Swanage). Not uncommon.

M. œcidioides Sauv. (= *Ectocarpus œcidioides* Rosenv.). Coasts of Cornwall (Falmouth); Devon (Seaton); Yorks. (Filey); Northumberland (Berwick). Scotland: Bute (Isle of Cumbrae). Not uncommon.

M.? saxicola Kuck. Coast of Dorset (Swanage). Rare.

Gen. 107. Ulonema Foslie.

U. rhizophorum Foslie. Coasts of Cornwall (Falmouth); Devon (Sidmouth); Yorks. (Filey); Northumberland (Berwick). Ireland: Roundstone, Co. Galway. Not uncommon.

Gen. 108. Hecatonema Sauv.

H. maculans Sauv. Coasts of Devon (Sidmouth) and Dorset (Swanage). Rare.

H. globosum Batt. (= *Ascocyclus globosus* Rke.). Coast of Bute (Isle of Cumbrae). Very rare.

H. reptans Sauv. (= *Ascocyclus reptans* Rke.). Coasts of Dorset (Swanage); Sussex (Bognor); Northumberland (Berwick). Scotland: Bute (Isle of Cumbrae). Rare.

H. Liechtensternii Batt. (= *Myrionema Liechtensternii* Hauck). Coast of Northumberland (Berwick). Very rare.

Gen. 109. Chilionema Sauv.

C. Nathaliæ Sauv. (= *Myrionema Leclancherii* Harv. pro parte). Coasts of Devon (Torquay, Sidmouth) and Dorset (Swanage). Rare.

C. reptans Sauv. (= *Ectocarpus reptans* Crn.). Coasts of Dorset (Swanage, Durlston Head), Suffolk (Felixstowe), Northumberland (Berwick), and Anglesea (Puffin Island). Very rare.

C. ocellatum Sauv. (= *Ascocyclus ocellatus* Rke.) Coasts of Devon (Sidmouth), Dorset (Swanage), and Northumberland (Berwick). Channel Islands (Alderney). Rare.

Gen. 110. Ascocyclus Magn.

A. orbicularis Magn. Coasts of Cornwall (Scilly Islands); Dorset (Swanage); Sussex (Bognor). Scotland: Bute (Isles of Arran and Cumbrae); Ayr (Portincross). Ireland: Galway. Channel Islands (Jersey, Alderney). Not uncommon on the leaves of *Zostera*.

A. hispanicus Sauv. Coasts of Devon (Sidmouth) and Dorset (Swanage). On the fronds of *Saccorhiza polyschides* and *Laminaria saccharina*. Rare.

A. sphærophorus Sauv. Coasts of Cornwall (Scilly Islands); Devon (Sidmouth); Dorset (Swanage). Channel Islands (Jersey). Locally abundant.

Gen. 111. Ralfsia Berk.

Subgenus 1. Stragularia (Strömf.).

R. spongiocarpa Batt. (= *R. clavata* Rke., non Farlow). Coasts of Devon (Plymouth, Wembury), Dorset (Swanage), Sussex (Bognor), and Northumberland (Berwick). Rare.

R. clavata Farlow (= *Myrionema clavatum* Harv., *Ralfsia clavata* Crn. (pro parte), *R. Borneti* Kuck., et *Stragularia adhærens* Strömf.). Coasts of Cornwall (Penzance, Falmouth, Fowey); Devon (Torquay); Dorset (Chapman's Pool); Essex (Estuary of the Orwell and Stour); Northumberland (Berwick). Scotland: Argyle (Appin, Loch Goil); Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Fairlie, Saltcoats). Channel Islands (Guernsey, Alderney). Locally abundant.

R. pusilla Batt. (= *Stragularia pusilla* Strömf.). Coasts of Dorset (Swanage) and Northumberland (Berwick). Scotland: Bute (Isle of Cumbrae). Very rare.

R. disciformis Crn. Coast of Devon (Plymouth, Wembury). Very rare.

Subgenus 2. Euralfsia.

R. verrucosa Aresch. Coasts of Cornwall (St. Minver, Trevone, Mount's Bay, Falmouth, Fowey); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Dorset (Chapman's Pool); Hants (Isle of Wight); Sussex (Bognor); Yorks. (Filey, Whitby); Northumberland (Hartley, Berwick); Cheshire (Hilbre Island). Wales: Anglesea (Puffin Island); Carnarvon (Llanfair-is-gaer). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa);

Fife (Kincraig, Elie, Earlsferry); Kincardine (Girdleness, Stonehaven); Aberdeen; Orkney Islands; Argyle (Appin, Dunstaffnage, Loch Goil); Bute (Isles of Arran and Cumbrae); Ayr (Ardrossan); Renfrew (Wemyss Bay). Ireland: Miltown Malbay and Kilkee, Co. Clare; Roundstone Bay, Co. Galway, &c. Channel Islands (Jersey, Guernsey, Alderney). Common.

Gen. 112. Lithoderma Aresch.

L. fatiscens Aresch. Coast of Devon (Bovisand, Plymouth, Wembury). Wales: Carnarvon (Llanfair-is-gaer). Scotland (Isle of Cumbrae).

L. simulans Batt. (= *Sorapion simulans* Kuck.). Coast of Devon (Plymouth Sound). Rare.

Fam. Chordariaceæ Rke.

Gen. 113. Spermatochnus Rke.

S. paradoxus Kütz. (= *Stilophora Lyngbyei* J. Ag.). Coasts of Cornwall (Falmouth); Dorset (Weymouth). Scotland: Orkney Islands (Kirkwall Bay); Bute (Isles of Arran and Cumbrae); Ayrshire. Ireland: Cove, Cork, and Strangford Lough). Rare.

S. Lejolisii Rke. (= *Stilophora Lejolisii* Thur.). Coasts of Cornwall (Falmouth, Looe) and Sussex (Brighton). Scotland: Bute (Isles of Arran and Cumbrae); Ayr (Fairlie).

Gen. 114. Stilophora J. Ag.

S. rhizodes J. Ag. Coasts of Cornwall (Trevone, St. Minver, Mount's Bay, Falmouth, Looe); Devon (Bovisand, Plymouth, Torquay, Sidmouth); Dorset (Portland, Weymouth, Swanage, Studland); Hants (Southampton); Sussex (Bognor, Brighton). Scotland: Orkney Islands; Argyle (Appin, Loch Etive); Bute (Isles of Arran, Bute, and Cumbrae). Ireland: Bantry Bay, Co. Cork; Wicklow; Strangford and Belfast Loughs, Co. Down; Roundstone, Co. Galway; Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey). Not uncommon on the shores of Southern England and South-western Scotland. Common on the eastern, southern, and western shores of Ireland.

S. tuberculosa Rke. Coasts of Dorset (Swanage) and Bute (Isle of Cumbrae). Locally abundant.

Gen. 115. Chordaria.

C. divaricata Ag. Coasts of Cornwall (Falmouth); Bute (Isle of Cumbrae); Ayr (Fairlie). Ireland: Belfast Lough, Carrickfergus. Very local.

C. flagelliformis Ag. Coasts of Cornwall (Trevone Bay, St. Minver, Penzance, Falmouth, Fowey, Looe); Devon (Plymouth, Torquay, Brixham, Dawlish, Exmouth, Sidmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Norfolk (Cromer, Sheringham); Yorks. (Filey, Scarborough); Northumberland (Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island, Eastham); Isle of Man. Wales: Anglesea (Towyn-y-Capel, Puffin Island). Scotland: Berwicks. (Burnmouth); Haddington (Dun-

bar); Edinburgh (Joppa); Fife (Kinghorn, Earlsferry, Elie); Forfar (Arbroath); Kincardine (Stonehaven); Elgin (Lossiemouth); Orkney Islands (Cairston, Kirkwall); Argyle (Loch Etive, Firth of Lorne, Dunoon); Bute (Isles of Arran, Bute, and Cumbrae); Dumbarton (Gare Loch). Ireland generally. Channel Islands (Jersey, Guernsey). Common.—*β firmus* Kjellm. Skerries, Co. Dublin.—*γ minor* J. Ag. Coasts of Northumberland (Berwick) and Edinburgh (Joppa).

Gen. 116. Mesogloia Ag.

M. vermiculata Le Jol. (= *M. vermicularis* Ag.). Coasts of Cornwall (Scilly Islands, Mount's Bay, Sennen Cove, Falmouth, Looe, Torpoint); Devon (Plymouth, Bovisand, Wembury, Torquay, Paignton, Exmouth, Sidmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Yorks. (Scarborough), Durham (Seaton); Northumberland (Holy Island); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Towyn-y-Capel, Puffin Island); Scotland: Haddington (Dunbar); Fife (Earlsferry, Kincraig, Pittenweem); Aberdeen (Peterhead); Banff (Gamrie); Elgin (Lossiemouth); Caithness (Berriedale); Orkney Islands (Skaill); Argyle (Dunstaffnage, Lismore, Dunoon); Bute (Isles of Arran and Cumbrae); Ayr (Ardrossan). Ireland: Common on the N.E., W., and S.W. coasts. Channel Islands (Jersey, Guernsey, Alderney). Widely distributed. Abundant in some localities, especially on the N.E. shores of Scotland; less plentiful in the south.

M. Leveillei Menegh. (= *Liebmannia Leveillei* J. Ag. et *L. major* Crn.). Coast of Elgin (Covesea, near Lossiemouth). Channel Islands (Guernsey, Alderney). Rare.

M. lanosa Crn. Coasts of Dorset (Weymouth) and Bute (Isles of Arran and Cumbrae). Probably not uncommon.

M. Griffithsiana Grev. Coasts of Cornwall (Mount's Bay, Falmouth); Devon (Plymouth, Livermead, Torquay, Ladran Bay, Sidmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton). Scotland: Bute (Isles of Arran and Cumbrae); Ayr (Fairlie, Seamill). Ireland: Bantry Bay, Co. Cork; Roundstone Bay, Co. Galway. Locally abundant.

Gen. 117. Castagnea Derb. & Sol.

C. virescens Thur. (= *Mesogloia virescens* Carm.). Coasts of Cornwall (Scilly Islands, St. Minver, Mount's Bay, Sennen Cove, Falmouth, Looe); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Sussex (Bognor, Brighton); Norfolk (Cromer); Yorks. (Scarborough); Northumberland (Cullercoats, Alnmouth, Holy Island, Bamborough, Berwick); Isle of Man. Wales: Carnarvon (Bangor); Anglesea (Llangwyfan, Towyn-y-Capel). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Inchkeith); Fife (Kincraig, Fifeness, Earlsferry, Elie); Forfar (Arbroath); Orkney Islands (Skaill); Argyle (Appin); Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats, Ardrossan); Renfrew (Wemyss Bay). Ireland: Not uncommon on the S.E. and W. coasts. Channel Islands (Jersey, Guernsey, Alderney). Common and abundant.—

β gracilis (= *M. gracilis* Carm.). S.W. coast of Scotland (Appin, Isle of Cumbrae). Rare.

C. Zosteræ Thur. (= *M. virescens β zostericola* Harv.). Coasts of Cornwall (Scilly Islands, Mount's Bay); Dorset (Weymouth, Swanage). Wales: Anglesea (Towyn-y-Capel). Scotland: Argyle (Appin); Bute (Isles of Bute and Cumbrae); Ayr (Seamill). Ireland: Roundstone Bay, Co. Galway. Channel Islands (Jersey, Guernsey). Probably common.

C. contorta Thur. Coasts of Dorset (Weymouth); Sussex (Worthing); Ayr (Fairlie). Rare.

Gen. 118. Myriocladia J. Ag.

M. Loveni J. Ag. Coast of Sussex (Brighton). Very rare.

M. tomentosa Crn. Coast of Dorset (Weymouth). Very rare.

Gen. 119. Microcoryne Strömf.

M. ocellata Strömf. Coast of Dorset (Ferry Bridge, near Weymouth). Very rare.

Gen. 120. Buffhamia Batt.

B. speciosa Batt. Coast of Dorset (Ferry Bridge, near Weymouth). Very rare.

Gen. 121. Petrospongium Näg.

P. Berkeleyi Näg. (= *Leathesia Berkeleyi* Harv.). Coast of Cornwall (Trevone, St. Minver, Bossiney, Mount's Bay, Looe); Devon (Plymouth, Tor Abbey, Sidmouth); Dorset (Portland, Chapman's Pool, Durlston Head, Swanage). Wales: Anglesea (Towyn-y-Capel). Ireland: Not uncommon on the west coast (Miltown Malbay and Kilkee, Co. Clare; Valentia, Co. Kerry, &c.). Channel Islands (Guernsey, Alderney). Rare.

Gen. 122. Leathesia S. F. Gray.

L. difformis Aresch. (= *L. tuberiformis* S. F. Gray). Coasts of Cornwall (Scilly Islands, St. Minver, Padstow, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Paignton, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Yorks. (Scarborough, Filey); Durham (Marsden); Northumberland (Cullercoats, Alnmouth, Bamborough, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Llangwyfan, Llanvælog). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, Longniddry); Edinburgh (Joppa); Fife (Elie, Earlsferry, Pittenweem); Forfar (Arbroath); Orkney Islands (Ryasgjo, Rinansey, &c.); Argyle (near the Falls of Lora); Bute (Isles of Arran and Cumbrae); Ayr (Seamill, Saltcoats). Ireland generally. Channel Islands (Jersey, Guernsey, Alderney). Very common.

Subgenus Corynophlœa Kütz.

L. crispa Harv. Coasts of Bute (Isle of Cumbrae) and Alderney. Very rare.

Fam. Sporochnaceæ Grev.

Gen. 123. Sporochnus Ag.

S. pedunculatus Ag. Coasts of Cornwall (Falmouth, Swanpool, Gerran's Bay); Devon (Plymouth, Sidmouth, Salcombe, Seaton); Dorset (Weymouth, Studland); Hants (Isle of Wight); Sussex (Brighton); Suffolk (Gunton, near Lowestoft; Corton); Norfolk (Yarmouth, Cromer, Runton, Sheringham); Yorks. (Bridlington, Filey); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Bangor). Scotland: Haddington (Preston Pans); Orkney Islands (Kirkwall); Bute (Isles of Arran and Cumbrae). Ireland (Bantry Bay, Co. Cork; Killiney and Malahide, Co. Dublin; Belfast Lough; Mouth of the River Bann, Londonderry; Roundstone Bay, Co. Galway); Channel Islands (Jersey, Guernsey). Rare.

Gen. 124. Carpomitra.

C. costata Batt. (= *Fucus costatus* Stackh. Ner. Brit. fasc. 3, p. 110, pl. xvii. (1801) e spec. orig. in Herb. Linn. Soc; *Fucus Cabreræ* Clem. Ens. p. 313 (1807); *Carpomitra Cabreræ* Kütz. Phyc. Gener. p. 343). Coasts of Cornwall (Penzance, Fowey); Devon (Plymouth). Ireland: Youghal, Co. Cork. Channel Islands (Jersey).

Fam. Chordaceæ Rke.

Gen. 125. Chorda Stackh.

C. filum Stackh. Coasts of Cornwall (St. Minver, Padstow, Penzance, Mount's Bay, Falmouth, Looe, &c.); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Worthing, Brighton); Kent (Dover, Margate); Essex (Harwich); Norfolk (Yarmouth, Cromer); Yorks. (Scarborough, Filey); Durham (Seaton); Northumberland (Alnmouth, Bamborough, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Towyn-y-Capel, Puffin Island); Carnarvon (Bangor). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Kinghorn, Earlsferry, Elie); Forfar (Arbroath); Orkney Islands; Argyle (Oban, Loch Etive, &c.); Bute (Isles of Arran, Cumbrae, and Bute). Ireland generally. Channel Islands (Jersey, Guernsey, Sark, Alderney). Common and abundant on the shores of the British Islands. — *β thrix* Hooker. Coasts of Cornwall (Acton Castle, Mount's Bay); Hants (Isle of Wight); Northumberland (Berwick). Probably common. — *γ subtomentosa* Aresch. Coasts of Devon (Sidmouth); Dorset, Weymouth, &c.); Hants (Isle of Wight); Northumberland (Berwick). Probably common.

C. tomentosa Lyngb. (= *C. filum β tomentosa* Harv.). Coasts of Cornwall (Boscastle); Devon (Ilfracombe, Torquay); Yorks. (Filey, Whitby); Northumberland (Berwick). Scotland: Fife (Earlsferry, Elie); Aberdeen (Peterhead); Orkney Islands (Kirkwall, Skaill); Bute (Isle of Cumbrae); Ayr (Saltcoats). Ireland: Coasts of Antrim and Galway. Rather rare. — *β subfulva* Foslie. Coast of Bute (Isle of Cumbrae). Rare.

Fam. Laminariaceæ Thur.

Gen. 126. Laminaria Lamour.

L. saccharina Lamour. Coasts of Cornwall (Penzance, Falmouth, Fowey, &c.); Devon (Plymouth, Torquay, Sidmouth, &c.); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton, Worthing); Kent (Dover, Deal); Essex (Clacton); Suffolk (Felixstowe); Norfolk (Yarmouth, Cromer); Durham (Sunderland, Whitby, &c.); Northumberland (Cullercoats, Alnmouth, Bamborough, Holy Island, Berwick); Isle of Man. Wales: Anglesea (Llanvælog, Puffin Island); Carnarvon (Bangor); Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar, Longniddry); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen; Elgin (Lossiemouth); Orkney Islands; Argyle (Oban, Inellan); Bute (Isles of Arran, Cumbrae, and Bute); Dumbarton (Gare Loch). Ireland: Common everywhere. Channel Islands (Jersey, Guernsey, Alderney). Very common and abundant everywhere on the shores of the British Islands. — Var. *caperata* Farlow. Shores of the Isle of Bute.—Var. *latissima* (Turn.) (= *L. latifolia* Ag.). Coasts of Norfolk (Yarmouth), Bute, and Firth of Forth. Rare. — Var. *Phyllitis* Le Jol. (= *L. Phyllitis* Lamour.). Coasts of Cornwall (St. Minver, Looe); Devon (Torbay, Sidmouth); Dorset (Portland, Weymouth); Hants (Isle of Wight); Sussex (Brighton, Eastbourne); Norfolk (Yarmouth); Yorks. (Filey, Whitby); Durham (Sunderland); Northumberland (Alnmouth, Holy Island, Berwick). Wales: Pembroke (Tenby). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Kinghorn, Elie, Earlsferry); Forfar Arbroath); Kincardine (Cove); Aberdeen (Peterhead); Banff (Macduff); Orkney Islands (Kirkwall); Argyle (Falls of Lora); Bute (Isles of Arran and Cumbrae); Dumbarton (Helensburgh); Ayr (Ardrossan). Ireland: Bantry Bay, Co. Cork; Larne, near Belfast; Kingstown, Howth, and Balbriggan, Co. Dublin; Inishbofin Island, Co. Galway. Not uncommon. — Var. *lincaris* J. Ag. Coasts of Hants (Isle of Wight, Portsea) and Essex (Clacton). Rather rare.

L. hieroglyphica J. Ag. (= *L. saccharina* var. *bullata* Auct. pro parte). Coasts of Northumberland (Berwick); Haddington (Dunbar, Longniddry); Fife (Elie); Forfar (Arbroath); Aberdeen (Peterhead); Elgin (Lossiemouth); Caithness (Berriedale); Orkney Islands. Common on the north-east coast of Scotland.

L. digitata Lamour. *α typica* Foslie. Coasts of Cornwall (St. Minver, Trevone, Penzance, Falmouth, Fowey, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton, Hastings); Kent (Folkestone); Northumberland (Cullercoats, Alnmouth, Bamborough, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Swillies). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Orkney Islands (Kirkwall); Argyle (Oban); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Portin-

cross, Ardrossan). North and west of Ireland. Channel Islands (Jersey, Guernsey, Alderney). Common. — *β stenophylla* Harv. Coasts of Yorks. (Scarborough, Filey); Northumberland (Holy Island, Berwick). Scotland: Berwicks. (Burnmouth); Forfar (Arbroath); Kincardine (Bay of Nigg); Orkney Islands; Ayr (Ardrossan). Ireland: Coast of Antrim. Rather rare, and confined to the northern shores of the British Islands. — *γ ensifolia* J. Ag. (= *L. ensifolia* Kütz.). Coasts of Northumberland (Holy Island, Berwick), Haddington (Dunbar), and Edinburgh (Joppa). Rare. — *δ valida* Foslie. Coast of Northumberland (Berwick). Probably not uncommon.

L. Cloustoni Edm. (= *L. hyperborea* Foslie; *L. digitata* Phyc. Br. pro parte). Coasts of Cornwall (Falmouth); Devon (Torquay, Sidmouth); Dorset (Weymouth); Hants (Isle of Wight); Yorks. (Scarborough, Filey); Durham (Seaton, Sunderland, &c.); Northumberland (Cullercoats, Alnmouth, Bamborough, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Towyn-y-Capel, Puffin Island). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Kinghorn, Kirkcaldy, Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven, Girdleness); Aberdeen (Peterhead); Elgin (Lossiemouth); Orkney Islands (Kirkwall); Argyle (Oban); Bute (Isle of Cumbrae). Ireland: Coasts of Antrim, Galway, and Cork. Channel Islands? Not uncommon.

Gen. 127. Saccorhiza De la Pyl.

S. polyschides Batt. (= *Fucus polyschides* Lightfoot, Flor. Scotica, p. 936 (1777); *F. bulbosus* Huds. Flor. Angl. ed. 2, p. 579 (1778); *Laminaria bulbosa* Lamour.; *Saccorhiza bulbosa* De la Pyl.). Coasts of Cornwall (Penzance, Falmouth, Fowey, Looe, Cawsand); Devon (Plymouth, Torquay, Sidmouth); Dorset (Portland, Weymouth. Swanage); Hants (Isle of Wight); Kent (Dover); Yorks. (Scarborough); Northumberland (Holy Island, Berwick); Isle of Man. Wales: Anglesea (Towyn-y-Capel). Scotland: Haddington (Dunbar); Fife (Inchcolm, Elie); Elgin (Lossiemouth); Orkney Islands; Argyle (Loch Fyne, Mull of Kintyre); Bute (Isles of Arran and Cumbrae); Ayr (Ardrossan). Ireland: Bantry Bay, Co. Cork; Larne, Co. Antrim. Channel Islands (Jersey, Guernsey, Alderney, Sark). Not uncommon.

Gen. 128. Alaria Grev.

A. esculenta Grev. Coasts of Cornwall (Trevone Bay, St. Minver, Lizard, Mousehole, Kynance Cove, St. Michael's Mount, Tintagel, Sennen Cove, St. Ives, Boskenna Bay, Falmouth, Fowey, Looe); Devon (Trentishoe, &c.); Dorset (Weymouth); Hants (Isle of Wight); Norfolk (Cromer); Durham (Seaton, &c.); Northumberland (Alnmouth, Holy Island, Berwick); Cumberland; Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Towyn-y-Capel). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar); Fife (Inchkeith, Seafield, Elie, Earlsferry, Fife Ness, Isle of May); Forfar (Arbroath); Kincardine (Stonehaven);

Aberdeen (Peterhead); Elgin (Lossiemouth); Orkney Islands; Argyle (Southend, Kintyre); Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats). N. and W. coasts of Ireland (Antrim, Cork). Channel Islands (Guernsey, Alderney). Abundant, but rather local.

Fam. Cutleriaceæ Thur.

Gen. 129. Zanardinia Nardo.

Z. collaris Crn. (= *Zonaria collaris* Ag.). Coasts of Jersey (Grouville and St. Catherine's Bays) and Guernsey (Varzon Bay). Very rare.

Gen. 130. Cutleria Grev.

C. multifida Grev. Coasts of Cornwall (Gyllingvase, Falmouth, St. Mawes); Devon (Plymouth, Torquay, Exmouth, Sidmouth, Salcombe, Seaton); Dorset (Weymouth, Swanage, Studland); Sussex (Bognor, Brighton); Essex (Harwich); Suffolk (Felixstowe); Norfolk (Yarmouth); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Orkney Islands (Kirkwall Bay); Argyle (Loch Fyne); Bute (Isles of Arran and Cumbrae). Ireland: Bantry Bay and Ballycotton, Co. Cork; Wicklow; Roundstone Bay, Co. Galway; Kilkee, Co. Clare. Rare.—*β angustifrons* Holm. & Batt. Coasts of Devon (Torquay, Sidmouth); Dorset (Weymouth); Orkney (Kirkwall). Rare.

Asexual form (Aglaozonia Zan.).

A. reptans Crn. (= *Zonaria parvula* Grev.). Coasts of Cornwall (Trevone, St. Minver, Penzance, St. Michael's Mount, Falmouth, Fowey); Devon (Sidmouth); Sussex (Bognor); Northumberland (Berwick). Wales: Carnarvon (Swillies). Scotland: Argyle (Loch Fyne); Bute (Isles of Cumbrae and Arran). Ireland: Portaferry and Strangford Lough, Co. Down, and Miltown Malbay, Co. Clare. Channel Islands (Jersey, Guernsey). Not uncommon.

Suborder Fucineæ.

Fam. Fucaceæ J. Ag.

Gen. 131. Fucus Dcne. & Thur.

F. anceps Harv. & Ward. Coast of Clare (Kilkee). Very rare.

F. distichus L. "Only one specimen found. Cast ashore at Port Seton (J. R. Henderson, 1882)." So far as I am aware, the claim of this species to be regarded as a British alga rests entirely on the passage quoted above from the late Mr. G. W. Traill's *Monograph of the Algæ of the Firth of Forth*, p. 11.

F. ceranoides L. Coasts of Cornwall (Falmouth, Fowey); Devon (Estuary of the Dart); Dorset (Swanage, Studland, Poole); Hants (Isle of Wight); Sussex (Shoreham, Brighton); Essex (Blackwater Estuary); Norfolk (Yarmouth); Yorks. (Filey); Durham (Mouth of the Wear, Sunderland); Northumberland (Cullercoats, Tweed Estuary); Cheshire (Hilbre Island). Wales: Anglesea (Llangwyfan); Carnarvon (Bangor, Mouth of Cegin). Scotland: Haddington (Dunbar); Aberdeen; Orkney Islands; Argyle (Oban, Loch Long, Loch Fyne, Loch Goil, Aros, Isle of Mull); Bute (Isles of Cumbrae

and Arran); Renfrew (Greenock). Ireland: Larne, near Belfast; Wicklow; Bantry Bay, &c. Not uncommon in places where fresh water enters the sea.—*β Harveyanus* Kjellm. Alg. Arct. Sea, p. 201. Berwick, July, 1895, E. A. B. Bantry Bay, Co. Cork, May, 1898, E. George. — *γ linearis* Batt. (= *F. linearis* Huds. Fl. Angl. p. 467 (1762), non Fl. Dan.; *F. distichus* Lightfoot, non L.; *F. ceranoides* vars. *divergens* et *lacustris* Kjellm.). Orkney Islands (Loch of Stennis). Very rare.

F. spiralis L. (= *F. Areschougii* Kjellm.). Coasts of Cornwall (Fowey, Falmouth); Devon (Torquay, Sidmouth); Dorset (Weymouth, Swanage); Sussex (Bognor, Brighton); Essex (Fambridge Ferry; Estuaries of the Blackwater, Orwell, and Stour); Northumberland (Bamborough, Holy Island, Berwick). Scotland: Edinburgh (Leith, Newhaven); Orkney Islands (Kirkwall). Common. —Var. *volubilis* Batt. (= *F. volubilis* Huds. Fl. Angl. ed. 2, p. 577 (1778), e spec. auth. in herb. Brit. Mus.). Coasts of Essex (Fambridge Ferry, Maldon) and Norfolk (Wells). Rare.—Var. *platycarpus* (= *F. platycarpus* Thur.). Coasts of Cornwall (Penzance, Fowey River); Devon (Torquay, Plymouth); Hants (Isle of Wight); Essex (Fambridge Ferry); Northumberland (Berwick); Cheshire (Hilbre Island). Wales: Flints (Point of Ayr); Anglesea (Puffin Island). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Joppa); Fife (Elie, Earlsferry, &c.); Orkney Islands (Kirkwall); Argyle (Oban); Bute (Isles of Cumbrae and Bute); Dumbarton (Gare Loch). Not uncommon. — Var. *nanus* Stackh. Ner. Br. ed. 2, pl. v. (= *Halidrys nana* Stackh. Ner. Br. ed. 2, p. xi; *F. limitaneus* Auct.; *F. vesiculosus* var. *nanus* Batt. in Hauck & Richter, Phyk. Univ. no. 263). Coast of Northumberland (Berwick). Rare.

F. vesiculosus L. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Durham, Northumberland, and Cheshire. Wales. Scotland, Ireland, and Channel Islands. Common and abundant. — Var. *divaricatus* Good. & Woodw. Coasts of Hants (Southampton) and Sussex (Worthing). Probably not uncommon. — Var. *angustifolius* Turn. (non *F. angustifolius* Wither.). Coasts of Devon (Plymouth); Sussex (Brighton, Worthing); Northumberland (Berwick). Rather rare. — Var. *balticus* J. Ag. (var. *subecostatus* Ag.). Coasts of Essex (Blackwater Estuary); Northumberland (Berwick); Argyle (Dunstaffnage Castle, Firth of Lorne, Isle of Kerrera); Renfrew (Gourock, Wemyss Bay); Bute (Isles of Arran, Cumbrae, and Bute). Ireland: Roundstone Bay, Co. Galway; Baldoyle. Rare. — Var. *laterifructus* Grev. Coasts of Devon (Plymouth); Northumberland (Berwick); Bute (Isles of Bute and Cumbrae, &c.). Common.— Var. *sphærocarpus* J. Ag. Coasts of Devon, Cornwall, Northumberland, &c. Not uncommon. — Var. *vadorum* Aresch. Coast of Devon (Plymouth, Sidmouth). Rather rare.

F. serratus L. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Wales, Scotland, Ireland, Channel Islands. Common and abundant on most of the rocky parts of the British

coast.—Var. *angustifrons* Stackh. Coasts of Cornwall, Devon, Dorset, &c. Common. — Var. *latifolius* Turn. Coasts of Bute, Argyle (Oban), and the Orkney Islands (Kirkwall Bay, Damsay Bay). Very rare. — Var. *integer* Turn. (= *F. angustifolius* Wither. pro parte). Coasts of Cornwall (St. Ives); Devon (Sidmouth); Sussex (Brighton). Very rare. — Var. *laciniatus* Grev. Coast of Bute. Very rare.

Gen. 132. Ascophyllum Stackh.

A. nodosum Le Jol. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Wales, Scotland, Ireland, and Channel Islands. Common and abundant on all the rocky parts of the British coast. — *β minor* Turn. Coast of Hants (Portsmouth).— *γ siliquatus* Turn. Coast of Kent (Dover). Rare. — *δ scopioides* Hauck. Coast of Essex (Blackwater Estuary, near Maldon). Rare.

A. Mackaii Holm. & Batt. (= *Fucus Mackaii* Turn.). Coasts of Scotland: Sutherland (Loch Coul and Kyle Scough); Ross (Loch Duich); Inverness (Arisaig, Isle of Skye); Hebrides (Loch Seaforth). Ireland: Birterbuy Bay, Co. Galway. Very rare. — *β Robertsoni* Batt. Loch Ranza, Isle of Arran. Very rare.

Gen. 133. Pelvetia Dene. & Thur.

P. canaliculata Dene. & Thur. (= *Fucus canaliculatus* L.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Norfolk, Yorks., Durham, Northumberland, Cheshire, Isle of Man, Wales, Scotland, Ireland, and Channel Islands. Common and abundant on most of the rocky parts of the British coasts.

Gen. 134. Bifurcaria Stackh.

B. tuberculata Stackh. (= *Pycnophycus tuberculatus* Kütz.). Coasts of Cornwall (Boscastle, St. Minver, Padstow, St. Ives, Mousehole, Lizard, St. Michael's Mount, Falmouth, Fowey, Looe); Devon (Plymouth, Bovisand, Wembury, Ilfracombe); Dorset (Portland); Hants (Isle of Wight); [Norfolk (Cromer). Scotland: Bute (Isle of Arran)]. Ireland: North and west coasts (Roundstone Bay, Co. Galway; Miltown Malbay and Kilkee, Co. Clare; Bantry Bay, Co. Cork). Channel Islands (Jersey, Guernsey, Alderney). Rare. On the shores of the British Islands only met with on the coast of Southern England, the Channel Islands, and N. and W. Ireland. (N.B.—The Scotch locality given above rests on the rather doubtful authority of Mahoney's *List of Clydesdale Algæ*, the Norfolk one on Geldart's *List of Norfolk Algæ;* it is probable that some other plant has been mistaken for the present in both instances.)

Gen. 135. Himanthalia Lyngb.

H. lorea Lyngb. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Northumberland, Isle of Man, Wales, Scotland, Ireland, and Channel Islands. Common on the rocky shores of the British Islands,

Gen. 136. Halidrys Lyngb.

H. siliquosa Lyngb. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex (Harwich), Suffolk (Felixstowe), Norfolk (Cromer), Yorks., Durham, Northumberland, Cheshire (Hilbre Island), Isle of Man, Wales, Scotland, Ireland, and Channel Islands. Common on the rocky shores of the British Islands.—*β siliculosus* (= *F. siliculosus* Stackh.; *H. siliquosa β minor* Turn. et var. *gracilis* Holm. & Batt.). Coasts of Cornwall (Polkerris, near Fowey); Devon (Torquay, Sidmouth); Dorset (Swanage); Northumberland (Berwick); Bute (Cumbrae). Probably not uncommon.

Gen. 137. Cystoseira Ag.

C. ericoides Ag. Coasts of Cornwall (St. Minver, Padstow, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torbay, Teignmouth, Sidmouth, Salcombe, Ilfracombe); Dorset (Swanage); Hants (Isle of Wight); Norfolk (Yarmouth). Wales: Anglesea (Llanvælog). Scotland: Argyle (Macrihanish Bay); Bute (Isle of Cumbrae); Ayr (Ayrheads). Ireland: Bantry Bay, Co. Cork; Miltown Malbay and Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the southern shores of England, and South and West of Ireland; very rare in Scotland.

C. granulata Ag. Coasts of Cornwall (St. Minver, Mount's Bay, Trevone Bay, Falmouth, Looe, Fowey); Devon (Torbay, Ilfracombe); Dorset (Weymouth); Hants (Isle of Wight); Sussex (Bognor, Brighton); Norfolk (Yarmouth). Wales: Anglesea (Aberffraw). Scotland: Ayr (Stevenston). Ireland: Bantry Bay and Youghal, Co. Cork; Larne and Portrush, Co. Antrim; Ardglass, Co. Down; Magilligan, Co. Derry. Channel Islands (Jersey, Guernsey, Alderney). Rather rare on the south coast of England, and the West and South of Ireland.

C. discors Ag. (= *C. fœniculacea* Grev.). Coasts of Cornwall (Padstow, St. Minver, Falmouth); Devon (Plymouth, Torbay, Ladran Bay, Sidmouth, Ilfracombe); Dorset (Weymouth); Hants (Isle of Wight); Sussex (Brighton); Kent (Dover, Folkestone); Norfolk (Yarmouth). Ireland: Bantry Bay, Co. Cork; Kilkee, Co. Clare; Roundstone, Co. Galway. Channel Islands (Jersey, Guernsey, Alderney). Rather rare on the south coast of England, and the South and West of Ireland.

C. fibrosa Ag. Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Fowey, Looe); Devon (Plymouth, Torbay, Sidmouth, Ilfracombe); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton, Selsea); Kent (Dover, Folkestone); Norfolk (Yarmouth); Yorks. Ireland: Portrush, Co. Antrim; Roundstone, Co. Galway; Kilkee, Co. Clare; Bantry, Co. Cork. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the shores of Southern England, and Northern, Western, and Southern Ireland.

Suborder Tilopterideæ Thur.

Gen. 138. Tilopteris Kütz.

T. Mertensii Kütz. (= *Ectocarpus Mertensii* Harv.). Coasts of Cornwall (Marazion, Falmouth, Mount Edgcumbe); Devon (Ilfra-

combe, Plymouth, Torbay, Sidmouth, Salcombe); Dorset (Weymouth); Sussex (Bognor, Brighton); Norfolk (Yarmouth); Durham (Seaton Carew); Northumberland (Cullercoats). Scotland: Edinburgh (Joppa); Fife (Kinghorn, Kirkcaldy); Aberdeen (Peterhead); Orkney Islands (Skaill); Argyle (Toward); Bute (Isle of Cumbrae); Ayr (Saltcoats). Ireland: Bantry Bay and Cove of Cork; Howth and Malahide, Co. Dublin; Strangford Lough, Co. Down; Carrickfergus, Co. Antrim; Roundstone, Co. Galway. Channel Islands (Jersey, Guernsey). Rare, but widely distributed.

Gen. 139. Haplospora Kjellm.

H. globosa Kjellm. emend. Breb. (= *H. globosa* Kjellm. et *Scaphospora speciosa* Kjellm.). S.W. coast of Scotland: Bute (Isle of Cumbrae). Very rare.

Gen. 140. Achinetospora Born.

A. pusilla Born. (= *Ectocarpus pusillus* Harv.). Coasts of Cornwall (Land's End, St. Michael's Mount, Mount's Bay, Cawsand Bay); Devon (Ilfracombe, Plymouth, Paignton, Torquay, Teignmouth, Sidmouth, Firestone Bay); Dorset (Swanage); Sussex (Brighton). Scotland: Haddington (Dunbar); Bute (Isles of Arran and Cumbrae). Ireland: Helvick Point and Dungarvan Bay, Co. Waterford. Channel Islands (Guernsey). Rather rare. — *β crinita* Batt. (= *Ectocarpus crinitus* Carm.). Coast of Devon (Ilfracombe, Watermouth, Torbay, Firestone Bay). Scotland: Edinburgh (Joppa, Caroline Park); Aberdeen (Peterhead); Argyle (Appin); Bute (Isles of Arran and Cumbrae); Renfrew (Gourock); Ayr (Girvan); Shetland Isles. Rare.

Suborder Dictyoteæ Thur.

Fam. Dictyotaceæ J. Ag.

Gen. 141. Dictyota Lamour.

D. dichotoma Lamour. Coasts of Cornwall (St. Minver, Trevone, Scilly Islands, Mount's Bay, Falmouth, Fowey, Looe); Devon (Plymouth, Torbay, Teignmouth, Sidmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Essex (Walton); Suffolk (Felixstowe); Norfolk (Yarmouth, Cromer); Yorks. (Whitby); Northumberland (Cullercoats, Alnmouth). Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Swillies). Scotland: Haddington (Dunbar); Edinburgh (Newhaven, Leith); Fife (Elie, Aberdour); Orkney (Kirkwall, Skaill); Argyle (Loch Etive, Forth of Lorne, Mull of Kintyre, Castle Toward); Bute (Isles of Cumbrae and Arran); Ayr (Ayrheads); Renfrew (Cloch). Ireland generally. Channel Islands (Jersey, Guernsey, Alderney). Common and abundant on the southern and western shores of England and Ireland; much less abundant, and local, on the east coast of England and of Scotland generally. — *β implexa* J. Ag. (= var. *intricata* Ag.). Coasts of Cornwall (St. Minver, Falmouth, Talland Bay); Devon (Torquay, Plymouth, Sidmouth); Dorset (Swanage); Hants (Isle of Wight); Anglesea (Puffin Island); Carnarvon (Criccieth); Orkney Islands (Kirkwall); Argyle (Castle Toward);

Dumfriesshire coast. Not uncommon. — γ *latifrons* Holm. & Batt. Coasts of Cornwall (Scilly Islands, Penzance, Falmouth); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Orkney (Kirkwall). Ireland: Ballycastle, Co. Antrim. Channel Islands (Jersey). Not uncommon.

D. ligulata Kütz. Coasts of Devon (Torquay, Sidmouth) and Dorset (Charmouth, Lyme Regis). Rare.

Gen. 142. Taonia J. Ag.

T. atomaria J. Ag. Coasts of Somerset (Minehead); Cornwall (St. Minver, Mount's Bay); Devon (Ilfracombe, Plymouth, Torbay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Worthing, Brighton); Suffolk (Felixstowe, Corton and Gunton near Lowestoft); Norfolk (Yarmouth, Cromer). Wales: Anglesea; Carnarvon (Llandudno); Glamorgan (Worm's Head). Scotland: Edinburgh (Portobello). Ireland: Ballycotton, Co. Cork. Locally abundant on the southern and eastern shores of England; very rare on those of Scotland and Ireland.—β *divaricata* Holm. & Batt. Coasts of Cornwall, Devon, and Dorset. Rare.

Gen. 143. Padina Adans.

P. pavonia Gaillon. Coasts of Devon (Torbay, Shaldon, Exmouth, Sidmouth); Dorset (Weymouth, Lulworth Cove, Chapman's Pool, Swanage); Hants (Isle of Wight); Kent (Dover, Margate); Essex (Harwich); Lancashire (Isle of Walney). Channel Islands (Jersey, Guernsey). Locally abundant on the southern shores of England and the Channel Islands.

Gen. 144. Dictyopteris Lamour.

D. membranacea Batt. (= *Fucus membranaceus* Stackh. Ner. Br. fasc. 1, p. 13, pl. vi. (1795) e spec. auth. in Herb. Kew.; *F. polypodioides* Desfont. Fl. Atlantica, ii. p. 421 (1798), non Gmelin, Hist. Fuc. p. 186 (1768); *Haliseris polypodioides* Ag.). Coasts of Cornwall (St. Minver, Mount's Bay, St. Austell Bay); Devon (Plymouth, Thatcher Rock, Livermead, Torquay, Sidmouth, Ilfracombe); Hants (Puckaster Rock). Ireland: Roundstone Bay, Co. Galway; Quilty Strand and Miltown Malbay, Co. Clare; Youghal, Co. Cork. Channel Islands (Jersey, Guernsey). Rare. Confined to the south coast of England and the Channel Islands, and the south and west of Ireland.

Order FLORIDEÆ Lamour.

Suborder Porphyreæ Thur.

Fam. Porphyraceæ Thur.

Gen. 145. Conchocelis Batt.

C. rosea Batt. Coasts of Devon (Plymouth, Tor Cross, Sidmouth); Bute (Isle of Cumbrae). Ireland (Dublin Bay and Roundstone Bay). Probably not uncommon.

Gen. 146. Goniotrichum Kütz.

G. elegans Le Jol. (= *Bangia elegans* Chauv.). Coasts of Cornwall (St. Minver); Devon (Plymouth, Sidmouth); Dorset (Weymouth, Swanage); Sussex (Worthing); Northumberland (Berwick). Wales (Menai Straits). Scotland: Argyle (Loch Etive); Bute (Isle of Cumbrae). Ireland: Strangford Lough and Portaferry, Co. Down; Dungarvan Bay, Co. Waterford. Not uncommon.

G. ramosum Hauck (= *Hormospora ramosa* Thw.). Coasts of Dorset (Littlesea, near Studland) and Northumberland (Berwick). Very rare.

G. cervicornu Reinsch. Coast of Devon (Plymouth, March, 1897, A. Church).

Gen. 147. Neevia Batt.

N. repens Batt. Coast of Kent (Deal). Rare.

Gen. 148. Erythropeltis Schm.

E. discigera Schm. var. *Flustræ* Batt. Coasts of Cornwall (Scilly Isles) and Kent (Deal). Rare.

Gen. 149. Erythrotrichia Aresch.

E. carnea J. Ag. (= *Bangia ceramicola* Chauv.). Coasts of Cornwall (Penzance, Falmouth, Fowey, Looe); Devon (Torquay); Dorset (Weymouth, Swanage); Sussex (Pagham, Brighton); Yorks. (Scarborough); Northumberland (Scremerston, Berwick). Wales: Loughor, Glamorganshire. Scotland: Argyle (Appin); Bute (Isles of Arran and Cumbrae); Ayr (Portincross, Ardrossan). Ireland: Belfast Lough. Channel Islands (Jersey, Guernsey, Alderney). Rarely met with in any quantity. Isolated filaments common.

E. ciliaris Batt., non Thur. (= *Bangia ciliaris* Carm.). Coasts of Cornwall (Scilly Islands), Argyle (Appin), and Forfar (Arbroath). Very rare.

E. Bertholdii Batt. (= *E. ciliaris* Berth., non *Bangia ciliaris* Carm.). Coast of Cornwall (Scilly Islands, Falmouth, Helford). Ireland: Rathlin Island and Ballycastle, Co. Antrim. Very rare.

E. investiens Born. (= *Bangia ciliaris* Traill, Monogr. Alg. Firth Forth, p. 5; *Erythrotrichia Boryana* Batt. in Holm. Alg. Br. Rar. Exsicc. no. 182, pro parte, non Berth.). Coasts of Sussex (Eastbourne); Bute (Isle of Arran); Ayr (Saltcoats, Fairlie); Edinburgh (Joppa); Fife (Kilrenny). Very rare.

E. Boryana Berth. (= *Porphyra ciliaris* Crn.; *E. ciliaris* Thur.). Coasts of Cornwall (Scilly Islands); Devon (Plymouth); Sussex (Eastbourne); Kent (Folkestone). Very rare. — Var. *crispa* Batt. Scilly Islands (Tean, Samson, St. Mary). Very rare.

E. reflexa Thur. (= *Bangia reflexa* Crn.). Coast of Dorset (Portland, August, 1900, E. A. B.; Alderney, Sept. 1901, E. D. Marquand). Very rare.

E. Welwitschii Batt. (= *Cruoria Welwitschii* Rupr. Och. Tang. p. 332, tab. 18, fig. 1 (1847); *Callithamnion lepadicola* J. Ag. Spec. Alg. iii. p. 12 (1876); Welw. Phyc. Lus. no. 23 !). Coast of Dorset (Swanage); Channel Islands (Guernsey). Very rare.

Gen. 150. Bangia Lyngb.

B. fuscopurpurea Lyngb. Coasts of Cornwall (St. Minver, Trevone Bay, Mount's Bay, Mount Edgcumbe); Devon (Ilfracombe, Plymouth, Teignmouth); Dorset (Weymouth); Sussex (Brighton); Essex (Harwich); Suffolk (Felixstowe); Norfolk (Yarmouth); Yorks. (Scarborough); Durham (Sunderland, South Shields); Northumberland (Holy Island, Berwick). Wales: Anglesea (Puffin Island); Glamorgan (Dunraven Castle). Scotland: Haddington (Dunbar); Edinburgh (Joppa, Caroline Park); Fife (Burntisland, Inchkeith, Earlsferry); Argyle (Loch Etive); Bute (Isles of Arran, Cumbrae, and Bute); Renfrew (Gourock); Ayr (Portincross, Girvan). Ireland: Roundstone Bay, Bantry Bay, &c. Channel Islands (Jersey, Guernsey). Not uncommon. — *β crispa* Holm. & Batt. Coasts of Cornwall (St. Minver); Dorset (Swanage); Norfolk (Yarmouth). Rare. — *γ Lejolisii* Holm. & Batt. Coast of Devon (Teignmouth). Rare.

Gen. 151. Porphyra Ag.

Subgenus 1. Euporphyra Rosenv.

P. coccinea J. Ag. Coasts of Devon (Plymouth); Northumberland (Berwick); Orkney Islands (Kirkwall); Bute (Isle of Cumbrae). Very rare.

P. leucosticta Thur. Coasts of Cornwall (Scilly Islands, Falmouth, Mount Edgcumbe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Essex (Harwich); Suffolk (Felixstowe); Yorks. (Scarborough); Northumberland (Alnmouth, Holy Island, Scremerston, Berwick). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Earlsferry); Forfar (Arbroath); Orkney Islands; Bute (Isles of Cumbrae and Bute); Ayr (Portincross). Ireland: Larne and Murlough Bay, Co. Antrim; Roundstone, Co. Galway. Channel Islands (Alderney). Common in spring and early summer.

P. linearis Grev. (= *P. vulgaris* Harv. Phyc. Br. Pl. ccxi. pro parte). Coasts of Cornwall (Pridmouth, Mount's Bay, Falmouth); Devon (Plymouth, Torbay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton, Hastings); Essex (Southend); Norfolk (Yarmouth); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Orkney Islands (Skaill); Argyle (Kirn); Bute (Isles of Bute, Arran, and Cumbrae); Dumbarton (Helensburgh). Ireland: Belfast Lough, Co. Down; Roundstone, Co. Galway; Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

P. umbilicalis Kütz. var. *laciniata* J. Ag. Coasts of Cornwall (St. Minver, Falmouth, Looe); Devon (Plymouth, Torbay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton, Hastings, Eastbourne); Kent (Folkestone, Deal); Essex (Harwich); Suffolk (Felixstowe); Norfolk (Yarmouth);

Yorks. (Scarborough, Filey, Whitby); Durham (Sunderland); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Isle of Man; Cheshire (Hilbre Island). Wales: Anglesea (Hilbre Island). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar, North Berwick); Edinburgh (Joppa); Fife (Kinghorn, Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Argyle (Firth of Lorne, &c.); Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Ardrossan, Saltcoats); Dumbarton (Helensburgh). Ireland: Bantry Bay, Co. Cork; Dungarvan Bay, Co. Waterford; Wicklow; Howth, Balbriggan, &c., Co. Dublin; Strangford and Belfast Loughs, Co. Down; Antrim coast; Roundstone, Co. Galway; Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney, Sark). Common and abundant everywhere on the rocky parts of the British coast. — Var. *umbilicalis* J. Ag. Coasts of Cornwall (Falmouth); Devon (Torquay, Sidmouth); Dorset (Swanage); Kent (Sheerness); Northumberland (Holy Island, Berwick). Scotland: Haddington (Dunbar); Forfar (Arbroath); Bute (Isles of Cumbrae and Bute); Argyle (Loch Goil); Ayr (Portincross, Ardrossan); Orkney Islands. Ireland: Bantry Bay, &c. Channel Islands (Jersey). Common and abundant on our rocky shores.

P. amethystea Kütz. Coasts of Yorks. (Scarborough); Edinburgh (Joppa); Fife (Earlsferry); Forfar (Arbroath). Coast of Ireland. Very rare.

Subgenus Diploderma Rosenv.

P. miniata Ag. *α typica* Rosenv. Coasts of Northumberland (Berwick); Bute (Isle of Cumbrae); Orkney Islands (Kirkwall). Ireland: Murlough Bay and Cushendall, Co. Antrim. Locally abundant in spring and early summer, but hitherto recorded from only a few localities in Scotland and Northern England and Ireland.—*β amplissima* Rosenv. (= *Diploderma amplissimum* Kjellm.). Coast of Bute (Isle of Cumbrae). Ireland: Clontarf, Co. Dublin. Very rare. — *γ tenuissima* Rosenv. (= *D. tenuissimum* Strömf.). Coast of Bute (Isle of Cumbrae). Very rare. —*δ abyssicola* Rosenv. (= *Porphyra abyssicola* Kjellm.). Coasts of Bute (Isle of Cumbrae) and the Orkney Islands (Kirkwall). Locally abundant.

Suborder Eufloridieæ.

Series Nemalioninæ Schm.

Fam. Helminthocladiaceæ Schm.

Tribe Acrochætieæ.

Gen. 152. Colaconema Batt., non Schm.

C. Bonnemaisoniæ Batt. Coasts of Devon (Plymouth) and Northumberland (Berwick). Very rare, and always parasitic in the fronds of *Bonnemaisonia asparagoides*.

C. reticulatum Batt. Coasts of Devon (Plymouth) and Donegal (Moville Bay). Very rare. Parasitic in the fronds of *Desmarestia Dresnayi*.

Gen. 153. Acrochætium Näg. (= Chantransia Schm., non Fries).

Obs.—As originally constituted by De Candolle, *Chantransia* was a mere assemblage of individuals without similarity of structure or reproductive function, including species of *Lemanea*, *Batrachospermum*, *Cladophora*, and *Œdogonium*. As reconstituted by Fries in 1825 (Syst. Orb. Veg. p. 338), with *Conferva chalybea* and *C. Hermani* for types, it does not differ in any essential particular from *Audouinella*, founded by Bory (Dict. Class. d'Hist. Nat. vol. iii. (1823), p. 340) two years earlier. Once more reformed by Schmitz (in Flora, 1889, p. 438), it is synonymous with *Acrochætium* Nägeli, Morph. und Syst. Ceram. p. 402 (1861). Under these circumstances it seems to me that either the name *Audouinella* must be substituted for *Chantransia* as that genus was understood by Thuret (*i. e.* to include both fresh-water forms, like *C. chalybea* and *C. Hermani*, and marine, like *C. corymbifera*, *C. efflorescens*, and *C. microscopica*), or, as seems preferable, to preserve the former name as that of a doubtful genus of fresh-water algæ, and to adopt Nägeli's genus *Acrochætium* for the reception of the well-understood marine forms.

α. Parasitic species.

A. entophyticum Batt. (= *Chantransia entophytica* Batt.). Coast of Devon (Plymouth). Very rare. Parasitic in the thallus of *Heterosiphonia plumosa*.

A. Chylocladiæ Batt. (= *Colaconema Chylocladiæ* Batt.). Coast of Devon (Plymouth, Torquay). Very rare. Parasitic in the thallus of *Chylocladia ovalis*.—f. *pulchra* Batt. Coast of Bute (Isle of Cumbrae). Parasitic in *Sertulariæ*.

A. endozoicum Batt. (= *Chantransia endozoica* Darbyshire). Coast of Northumberland (Alnmouth) and S.W. coast of Ireland (Valentia, Co. Kerry). Parasitic in species of *Alcyonidium*. Very rare.

β. Epiphytic species.

A. trifilum Batt. (= *Chantransia trifila* Buffham). Coasts of Devon (Plymouth) and Dorset (Swanage). Very rare.

A. microscopicum Näg. Coasts of Cornwall (Kynance Cove); Devon (Torquay); Northumberland (Berwick). Very rare.

A. sparsum Batt. (= *Callithamnion sparsum* Carm.). Coasts of Cornwall (Mount's Bay); Sussex (Brighton); Durham (Roker). Scotland: Haddington (Dunbar); Fife (Earlsferry); Kincardine (Bay of Nigg); Orkney Islands (Kirkwall); Argyle (Appin). Ireland: Miltown Malbay, Co. Clare. Rare.

A. mirabile Näg. (= *Callithamnion mirabile* Kütz.). Coast of Dorset (Swanage). Rare.

A. cæspitosum Näg. (= *Callithamnion cæspitosum* J. Ag.). Coast of Dorset (Swanage).

A. virgatulum J. Ag. (= *Callithamnion virgatulum* Harv.). Coasts of Cornwall (Trevone Bay, St. Minver, Falmouth, Looe, Tor Point); Devon (Plymouth, Torquay, Ladran Bay, Sidmouth); Dorset (Weymouth, Swanage); Sussex (Brighton); Kent (Dover); Yorks. (Filey, Scarborough); Durham (Sunderland); Northumberland (Alnmouth, Berwick); Isle of Man; Cheshire (Hilbre Island, Eastham). Wales:

Anglesea (Puffin Island). Scotland: Haddington (Dunbar); Fife (Kinghorn); Forfar (Arbroath); Orkney Islands (Kirkwall Bay, Skaill); Argyle (Loch Etive); Bute (Isles of Arran and Cumbrae); Ayr (Largs, Skelmorlie). Ireland: Bantry Bay, Co. Cork; Antrim coast; Roundstone Bay, Co. Galway. Channel Islands (Jersey, Alderney). Not uncommon.

A. secundatum Näg. Coasts of Cornwall (Mount's Bay, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Swanage); Kent (Folkestone); Norfolk (Yarmouth); Northumberland (Holy Island, Scremerston, Berwick). Wales: Anglesea (Puffin Island). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Joppa, Caroline Park); Fife (Elie, Earlsferry); Orkney Islands (Skaill); Argyle (Loch Etive, Appin); Bute (Isles of Cumbrae and Arran); Ayr (Fairlie, Ardrossan, Saltcoats). Ireland: Miltown Malbay, Co. Clare. Common.

A. luxurians Näg. (= *Callithamnion luxurians* J. Ag.). Coasts of Cornwall (Mount Edgcumbe); Dorset (Weymouth, Swanage). Channel Islands (Guernsey). Rare.

A. Daviesii Näg. (= *Callithamnion Daviesii* Harv.). Coasts of Cornwall (Trevone Bay, Mount's Bay, Flushing, Falmouth, Looe); Devon (Plymouth, Torquay, Sidmouth, Ilfracombe); Dorset (Swanage); Hants (Isle of Wight); Sussex (Brighton); Norfolk (Weybourne); Yorks. (Filey); Durham (Sunderland); Northumberland (Holy Island, Berwick); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Fife (Elie, Kinghorn); Orkney Islands (Skaill); Kincardine (Stonehaven); Argyle (Loch Etive); Bute (Isles of Cumbrae and Arran); Ayr (Largs). Ireland: Bantry Bay, Co. Cork; Clontarf, Co. Dublin, &c. Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

A. efflorescens Näg. (= *Callithamnion efflorescens* J. Ag.). Coast of Dorset (Swanage, Aug. 1894, E. A. B.). Epiphytic on *Dudresnaya verticillata* and *Naccaria Wigghii*. Rare.

A. corymbiferum Batt. (= *Chantransia corymbifera* Thur.). West coast of Ireland (Kilkee, Co. Clare. Epiphytic on *Helminthocladia purpurea*, 1846, W. H. Harvey in Herb. Pollexfen).

Tribe Nemalieæ Schm.

Gen. 154. Nemalion Targioni-Tozzetti.

N. elminthoides Batt. (= *Fucus elminthoides* Velley in Withering, Botan. Arrang. ed. 2, vol. iii. p. 255, pl. xvii. fig. 2 (1792), e spec. auth. in Herb. Kew.; *Fucus Nemalion* Bertolini, Amoenit. Ital. pl. 5, fig. 9 (1819); *Nemalion lubricum* Duby, Bot. Gal. p. 959 (1830); *N. multifidum β simplex* Harv. Phyc. Br. pl. xxxvi.). Coasts of Cornwall (Scilly Islands, Land's End, Falmouth); Devon (Torquay, Exmouth); Dorset (Portland, Durlston Head, Swanage). Scotland: Ayr (Portincross); Moray Firth. Channel Islands (Alderney). Local.

N. multifidum J. Ag. Coasts of Cornwall (Trevone Bay, St. Minver, Padstow, Falmouth, Pridmouth, Cawsand Bay, Whitsand Bay); Devon (Bovisand Bay, Torquay); Dorset (Portland, Weymouth, Swanage). Scotland: Bute (Isles of Arran and Bute);

Argyle (Machrihanish Bay); Orkney Islands. Ireland: Bantry Bay, Co. Cork; Balbriggan and Killiney, Co. Dublin; Downshire coast; Kilkee and Miltown Malbay, Co. Clare. Channel Islands (Alderney). Rather rare.

Gen. 155. Helminthocladia J. Ag. (non Harv.).

H. purpurea J. Ag. (= *Nemalion purpureum* Chauv.). Coasts of Cornwall (Whitsand Bay); Devon (Torquay, Exmouth, Sidmouth); Sussex (Brighton); Isle of Man (*fide* Talbot). Ireland: Balbriggan and Ireland's Eye, Co. Dublin; Kilkee and Miltown Malbay, Co. Clare. Channel Islands (Guernsey). Very rare.

H. Hudsoni J. Ag. Coasts of Cornwall (Whitsand Bay) and Devon (Exmouth).

Gen. 156. Helminthora J. Ag.

H. divaricata J. Ag. (= *Dudresnaya divaricata* Harv. Phyc. Br. pl. cx.). Coasts of Cornwall (St. Minver, Scilly Islands, Mount's Bay, Falmouth, Pridmouth, Whitsand Bay); Devon (Plymouth, Bovisand, Torquay, Sidmouth); Dorset (Portland, Weymouth, Swanage, Poole); Sussex (Brighton). Wales: Anglesea (Aberffraw). Scotland: Kincardine (Bay of Nigg); Aberdeen (Peterhead); Banff (Gamrie); Elgin (Lossiemouth); Orkney Islands (Skaill); Argyle (Appin); Bute (Arran); Ayr (Saltcoats, Ardrossan). Ireland: Bantry, Co. Cork; Killiney and Howth, Co. Dublin; Antrim and northern coast generally; Roundstone, Co. Galway; Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney). Locally abundant, but not generally distributed.

Fam. Chætangiaceæ Schm.

Tribe Scinaieæ Schm.

Gen. 157. Scinaia Bivona.

S. furcellata Bivona (= *Ginnania furcellata* Mont.). Coasts of Cornwall (Scilly Islands, Mount's Bay, Penzance); Devon (Torcross, Torquay, Dawlish, Exmouth, Budleigh Salterton, Sidmouth); Dorset (Weymouth, Studland); Hants (Isle of Wight, Southampton); Sussex (Worthing, Brighton); Suffolk (Felixstowe, Corton near Lowestoft); Norfolk (Yarmouth, Sheringham, Cromer). Scotland: Orkney Islands (Deer Sound); Bute (Isles of Arran and Cumbrae). Ireland: Bantry Bay, Co. Cork; Howth, Co. Dublin; Portaferry and Strangford Lough, Co. Down; north side of Belfast Lough and Glenarm Bay, Co. Antrim; Roundstone Bay, Co. Galway; Quilty Strand, Miltown Malbay, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney). Rather rare. — f. *subcostata* J. Ag. Coasts of Devon (Sidmouth), Bute (Isle of Cumbrae), and Cork (Bantry Bay). Rare.

Tribe Chætangieæ Schm.

Gen. 158. Choreocolax Reinsch.

C. polysiphoniæ Reinsch. Coasts of Devon (Plymouth); Kent (Folkestone); Northumberland (Berwick). Scotland: Bute (Isle of Cumbrae); Ayr (Fairlie, Saltcoats). Ireland: Dungarvan Bay,

Co. Waterford. Channel Islands (Guernsey, June, 1902, Mrs. A. Hamber). Not uncommon parasitic on the fronds of *Polysiphonia fastigiata*.

C. tumidus Reinsch. Coasts of Northumberland (Berwick) and Bute (Isle of Cumbrae). Probably not uncommon parasitic on the fronds of *Ceramia*, *Cystoclonium purpureum*, &c.

Fam. Gelidiaceæ Schm.

Tribe Harveyelleæ Schm.

Gen. 159. Harveyella Schm. & Rke.

H. mirabilis Schm. & Rke. Coasts of Dorset (Lyme Regis, Charmouth, Weymouth); Hants (Isle of Wight); Kent (Deal); Essex (Clacton); Northumberland (Berwick). Scotland: Ayr (Fairlie). Not uncommon parasitic on the fronds of *Rhodomela subfusca*.

H. pachyderma Batt. (= *Choreocolax pachydermus* Reinsch.; *C. albus* Kuck.). Coasts of Devon (Torquay, Sidmouth); Hants (Gosport). Parasitic on the fronds of *Gracilaria confervoides*. Rare.

Tribe Wrangelieæ Schm.

Gen. 160. Atractophora Crn.

A. hypnoides Crn. Coasts of Devon (Exmouth); Dorset (Weymouth, Swanage). Channel Islands (Jersey). Very rare.

Gen. 161. Naccaria Endl.

N. Wigghii Endl. Coasts of Cornwall (Mount's Bay, Falmouth, Fowey, Mount Edgcumbe); Devon (Plymouth, Bovisand, Torquay, Slapton, Exmouth, Sidmouth); Dorset (Weymouth, Swanage); Hants (Shanklin, I. W.); Sussex (Brighton); Kent (Folkestone); Norfolk (Yarmouth, Runton); Isle of Man. Scotland: Argyle (Campbeltown, Machrihanish Bay); Bute (Isle of Cumbrae); Ayr (Fairlie, Ayrheads). Ireland: Bantry Bay, Co. Cork; Wicklow; Belfast Lough, Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey). Rare.

Tribe Gelidieæ Schm.

Gen. 162. Pterocladia J. Ag.

P. capillacea Born. (= *Gelidium corneum* vars. ε *capillaceum*, δ *uniforme*, et γ *pinnatum* Grev.). Coasts of Cornwall (St. Minver, Mount's Bay, King's Cove, Mount Edgcumbe); Devon (Ilfracombe, Torquay, Dawlish, Exmouth, Sidmouth); Hants (Isle of Wight); Yorks. (Scarborough). Scotland: Isle of Bute. Ireland.

Gen. 163. Gelidium Lamour.

G. crinale J. Ag. α *genuinum* Hauck (= *G. corneum* var. *crinale* Auct.). Coasts of Cornwall (St. Minver, Kilmouth, Looe); Devon (Ilfracombe, Torbay, Sidmouth); Dorset (Weymouth, Lulworth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton, Eastbourne); Norfolk (Cromer); Northumberland (Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Scotland: Berwicks. (Burnmouth); Fife (Earlsferry, Elie); Bute (Isles of

Arran, Bute, and Cumbrae); Ayr (Fairlie, Saltcoats). Ireland: Belfast Bay, &c. Channel Islands (Jersey). Not uncommon.— *β lubricum* Hauck (= *Acrocarpus lubricus* Kütz.). Coasts of Dorset (Swanage, Sept. 1894, and Studland, Sept. 1898, E. A. B.); Sussex (Brighton, J. Miles, Dec. 1889). Rare. — *γ spathulatum* Hauck (= *Acrocarpus spathulatus* Kütz.). Coasts of Devon (Torquay) and Bute (Isle of Cumbrae). Rare.—*δ polycladum* Hauck (= *Gelidium polycladum* Kütz.). Coasts of Haddington (Dunbar) and Bute (Cumbrae). Rare.

G. pusillum Le Jol. (= *G. corneum* var. *clavatum* Grev. et var. *cæspitosum* J. Ag.). Coasts of Somerset (Clevedon, Minehead); Cornwall (St. Michael's Mount, Mount's Bay); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage, Studland); Sussex (Brighton); Durham (Marsden); Northumberland (Alnmouth, Bamborough, Berwick). Scotland: Edinburgh (Caroline Park); Fife (Earlsferry); Orkney Islands (Kirkwall Bay); Argyle (Appin); Bute (Isle of Cumbrae). Ireland: Roundstone Bay, Co. Galway. Common on the southern shores of England (and Ireland?); much rarer on those of Northern England and Scotland.

G. aculeatum (= *G. corneum* var. *aculeatum* Grev.). Coasts of Cornwall (Scilly Islands, Mount's Bay, Falmouth, Pridmouth); Devon (Ilfracombe, Torbay); Northumberland (Holy Island). Scotland: Bute (Isle of Cumbrae). Rare. — Var. *abnorme* Batt. (= *G. corneum* var. *abnorme* Grev.). Coasts of Cornwall (Mount's Bay); Devon (Ilfracombe, Torquay). Scotland: Bute (Isle of Cumbrae). Rare.

G. pulchellum Kütz. *α genuinum* Batt. (= *G. corneum* var. *pulchellum* Grev.; *Fucus corneus* var. *pulchellus* Turn. Hist. Fuc. t. 257, f. p.). Coasts of Cornwall (Falmouth); Devon (Torquay); Suffolk (Felixstowe). Scotland: Bute (Port Bannatyne). Ireland: Bantry Bay and Youghal, Co. Cork; Roundstone Bay, Co. Galway. Channel Islands (Guernsey). Rare. — *β setaceum* Batt. (= *G. corneum* var. *setaceum* Kütz. Tab. Phyc. xviii. tab. 54). Coast of Galway (Roundstone Bay). Channel Islands (Guernsey). Rare.— *γ clavifer* Batt. (= *G. corneum* var. *clavifer* Grev.). Coasts of Dorset (Portland) and Cork (Bantry Bay). Rare.

G. attenuatum Thur. (= *G. corneum* var. *attenuatum* Hook.). Coasts of Devon (Paignton, Torquay, Sidmouth) and Dorset (Weymouth, Swanage, Studland). Rare. — *β confertum* Batt. (= *G. corneum* var. *confertum* Grev.). Coasts of Cornwall (Falmouth); Devon (Paignton, Sidmouth); Northumberland (Black Rocks, Bamborough); Bute (Isles of Bute and Cumbrae). Rare.

G. corneum Lamour. Coasts of Cornwall (Trevone Bay); Dorset (Swanage); Hants (Isle of Wight); Sussex (Brighton); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Edinburgh (Caroline Park, Joppa); Orkney Islands; Argyle (Loch Etive); Bute (Isles of Arran and Cumbrae); Ayr (Ayrheads). Ireland: Roundstone Bay, Co. Galway; Miltown Malbay, Co. Clare, &c. Channel Islands (Jersey, Guernsey, Alderney). Not common.

G. latifolium Born. (= *G. corneum* var. *latifolium* Grev.; var. *plumula* Kütz.). Coasts of Cornwall (Mount's Bay, St. Mawes,

Fowey); Devon (Tor Abbey, Sidmouth); Dorset (Weymouth, Swanage). Scotland: Bute (Isles of Cumbrae and Bute); Ayr (Girvan). West coast of Ireland (Roundstone Bay, Miltown Malbay, &c.). Channel Islands (Jersey, Guernsey). Probably not uncommon. — *β Hystrix* Hauck (= *G. corneum* γ *Hystrix* J. Ag.). Coast of Dorset (Weymouth, Aug. 1900, E. A. B.). — γ *laciniata* Batt. (= *G. corneum* var. *laciniatum* Kütz.). Coast of Devon (Tor Abbey, March, 1883, E. M. Holmes).— δ *flexuosum* Batt. (= *G. corneum* var. *flexuosum* Harv.). Coasts of Cornwall (Mount Edgcumbe) and Devon (Torquay).

G. sesquipedale Thur. (= *G. corneum* var. *sesquipedale* Grev.). Coast of Devon (Torquay, Sidmouth). Rare.

G. melanoideum var. *filamentosa* Shousb. Coasts of Sussex (Hastings) and Northumberland (Alnmouth). Very rare.

Series Gigartininæ Schm.

Fam. Gigartinaceæ Schm.

Tribe Gigartineæ Schm.

Gen. 164. Chondrus Stackh.

C. crispus Stackh. Coasts of Cornwall (St. Minver, Padstow, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Sidmouth, Ilfracombe); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton, Hastings); Kent (Folkestone, Deal); Essex (Harwich, Dovercourt); Suffolk (Felixstowe); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Cheshire (Eastham, Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Berwicks. (Burnmouth, Eyemouth); Haddington (Dunbar, Longniddry); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Orkney and Shetland Islands; Argyle (Loch Etive, &c.); Bute (Isles of Arran and Cumbrae); Ayr (Portincross, &c.). Ireland: Bantry, Co. Cork; Wicklow; Balbriggan, Co. Dublin; Belfast Lough, Co. Down; Roundstone, Co. Galway; Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney, Sark). Very common on all rocky parts of the British coast. — *β virens* (Turn.). Coasts of Cornwall, Devon, and Dorset. Not uncommon.—γ *stellatus* (Turn. pro parte). On most parts of the British coast, very common. —δ *æqualis* (Turn. pro parte). Cornwall (Falmouth); Devon (Sidmouth, Torquay); Dorset (Weymouth, Swanage); Northumberland (Holy Island, Berwick); Orkney Islands, &c. Common.— ε *filiformis* (Turn.). Coasts of Devon (Sidmouth, Torquay); Dorset (Swanage); Sussex (Worthing, Brighton); Durham (Seaton, &c.). Not uncommon. — ζ *patens* (Turn.). Devon (Torquay); Dorset (Weymouth). Channel Islands, &c. Not uncommon.—η *Sarniensis* (Turn.). Dorset (Weymouth). Channel Islands (Guernsey, Alderney). Rather rare.—θ *lacerus* (Turn.). Devon (Torquay, Sidmouth). Orkney Islands (Kirkwall). Channel Islands (Guernsey). Rather rare. — ι *planus* (Turn.). Coasts of Devon (Torquay, Sidmouth, Lynmouth); Dorset (Weymouth); Sussex (Hastings). Orkney Islands (Kirkwall). Not uncommon.

Gen. 165. Gigartina Stackh.

G. Teedii Lamour. Coasts of Devon (Elberry Cove, Torbay) and the Channel Islands (Jersey). Very rare.

G. acicularis Lamour. Coasts of Cornwall (Mousehole); Devon (Ilfracombe, Plymouth, Bovisand, Lupton Cove, Torquay, Sidmouth); Hants (Isle of Wight). Ireland: Valentia, Co. Kerry; Dungarvan Bay, Co. Waterford; Belfast Bay, Co. Down; Kilkee, Co. Clare. Channel Islands (Jersey, Guernsey, Alderney). Very rare.

G. pistillata Stackh. Coasts of Cornwall (Scilly Islands, St. Minver, Padstow, St. Ives, Mount's Bay, Penzance, Lizard, Whitsand Bay) and the Channel Islands (Jersey, Guernsey, Alderney). Very rare.

G. stellata Batt. (= *Fucus stellatus* Stackhouse in Withering, Bot. Arr. ed. 3, vol. iv. p. 99, excl. syn. omn. (1796), e spec. orig. in Herb. Linn. Soc.; *F. mamillosus* Good. & Woodw. in Linn. Soc. Trans. vol. iii. p. 174 (1797); *Gigartina mamillosa* J. Ag.). (*Note.*—Withering gives the following very accurate account of this species:—"F. cartilaginous, forked, greatly widening upwards; surface thick-set with excrescences bearing fructifications on their extremities. Plant 4 inches high, beautifully hedge-hogged with excrescences, sometimes on one, sometimes on both surfaces. They are upright, partly cylindrical, fleshy, bearing the fructifications embedded in their tops. Its colour is brown, purple, or bright green.—Mr. Stackhouse." While the second fasciculus of his *Nereis Britannica* was "under preparation for the press," Stackhouse supplied Withering with "references to the plates and likewise with characters and specimens of the nondescript species" it was to contain. Withering published descriptions of these "nondescripts" in the third edition of his *Systematic Arrangement of British Plants* (*vide* vol. iv. p. 101), which appeared in 1796, the year before the publication of *Observations on the British Fuci* by Goodenough and Woodward. He, however, makes no mention of Stackhouse's *Fucus echinatus*, a figure of which appears sidē by side with that of *F. stellatus* on Plate xii. of the *Nereis;* and it seems, from the above quoted description, that he rightly considered it identical with *F. stellatus.* I have examined the specimen of his *F. stellatus* presented to the Linnean Society by Stackhouse, and it undoubtedly belongs to the present species, the fronds being covered with the characteristic cystocarps.) — f. *genuina* (= *F. echinatus* Stackh.). Coasts of Somerset, Cornwall, Devon, Dorset, Hants, Sussex, Kent, Yorks., Durham, Northumberland, Cheshire, Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Common. —f. *acuta* Good. & Woodw. (incl. f. *linearis* Turn.). Coasts of Cornwall (Falmouth); Devon (Sidmouth); Kent (Deal); Northumberland (Berwick). Not uncommon. — f. *prolifera* Turn. (incl. f. *stellata* Turn.). Coasts of Cornwall (Falmouth, Looe), Kent (Folkestone), &c. Not uncommon. — f. *incurvata* (Turn.). Coasts of Devon, Cornwall, and Dorset (Weymouth). Rather rare.

Tribe Tylocarpeæ Schm.

Gen. 166. Phyllophora Grev.

P. epiphylla Batt. (= *Fucus epiphyllus* Müll. Fl. Dan. fasc. xi. tab. 708 (March, 1777); *F. prolifer* Lightfoot, Fl. Scot. ii. p. 949, tab. 30 (July, 1777)). (*Note.*—Linnæus's description of *Fucus rubens* is in no way applicable to the present species. In his herbarium there are four specimens preserved under the name *F. rubens;* three of them, pinned together, belong to the present species, the fourth to *Rhodymenia palmata.* It seems to me to be more than probable that Linnæus gave the name *Fucus rubens* to Royen's "Fucus caule tereti ramoso, foliis oblongis undulatis sinuatis difformibus" (Fl. Leyd. p. 514), without ever having seen a specimen of the plant; and subsequently laid into his herbarium, at different times, specimens of two very dissimilar species, believing, at the time of laying in, that each was the plant referred to by Royen. It is worthy of note that Esper understood the Linnean description to refer to *R. palmata* (Esp. Icon. Fuc. p. 148, tab. 75). It is equally doubtful what Hudson's *Fucus crispus* really was. The synonyms given in the first edition of the *Flora Anglica*, p. 472 (1762), would lead one to suppose it was the present species; but in the second edition Hudson adds a reference to the *Fucus crispus* of Linnæus (*Mantissa Plantarum*, p. 134 (1767)), which makes one doubt whether his plant may not have been only a variety of *Chondrus crispus.*) *Distribution.*—Coasts of Cornwall (St. Minver, Padstow, Penzance, Mount's Bay, Falmouth, Looe, Fowey); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Worthing, Brighton, Hastings); Kent (Folkestone, Dover, South Foreland, Deal, Ramsgate); Essex (Clacton, Dovercourt); Suffolk (Felixstowe); Norfolk (Yarmouth, Cromer); Yorks. (Filey); Durham (Sunderland, Marsden); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick). Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Cove, Stonehaven, Bay of Nigg, Girdleness); Aberdeen (Peterhead); Orkney Islands (Kirkwall Bay); Argyle (Loch Etive, Loch Creran, Lismore); Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Ardrossan). Ireland: Cork (Bantry Bay); Down (Belfast Lough); Galway (Roundstone Bay); Clare (Miltown Malbay, Kilkee); Kerry (Dingle). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

P. Brodiæi J. Ag. Coasts of Cornwall (Falmouth, Whitsand Bay, Plymouth); Devon (Torquay); Hants (Isle of Wight); Durham (Marsden); Northumberland (Whitley, Bamborough, Holy Island, Berwick). Wales: Anglesea. Scotland: Haddington (Dunbar, North Berwick, Longniddry); Edinburgh (Joppa, Leith, Caroline Park); Fife (Elie, Earlsferry, Pittenweem); Forfar (Dundee, Firth of Tay); Elgin (Lossiemouth); Orkney Islands (Kirkwall); Bute (Isles of Arran, Cumbrae, and Bute). Ireland: Down (Strangford Lough, Bangor, south side of Belfast Lough); Antrim

(Larne); Derry (mouth of the River Ban). Rather rare.—Var. *angustissima* Ag. Orkney Islands (Loch of Stennis). Very rare.

P. palmettoides J. Ag. Coasts of Cornwall (St. Minver, Mount's Bay, Whitsand Bay); Devon (Plymouth, Torquay, Sidmouth); Sussex (Brighton); Isle of Man. Ireland: Dublin (Malahide). Channel Islands (Guernsey). Rare.

P. Traillii Holm. & Batt. Coasts of Cornwall (Fowey, Plymouth, Mount Edgcumbe); Devon (Torquay); Anglesea (Puffin Island); Northumberland (Holy Island, Berwick). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Joppa, Granton); Fife (Inchkeith); Orkney Islands (North Ronaldshay); Bute (Isle of Cumbrae). Ireland: Antrim (Torrhead). Probably not uncommon.

P. membranifolia J. Ag, Coasts of Cornwall (St. Minver, Trevone, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Teignmouth. Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Worthing, Brighton, Hastings); Kent (Dover, Deal); Essex (Clacton, Dovercourt, Harwich); Suffolk (Felixstowe, Corton); Norfolk (Yarmouth); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Cullercoats, Almouth, Holy Island, Berwick); Cheshire (Hilbre Island). Wales: Anglesea (Puffin Island), Scotland: Haddington (Dunbar); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Cove, Stonehaven, Bay of Nigg); Aberdeen (Peterhead); Orkney Islands; Argyle (Loch Goil, Loch Etive. Sound of Kerrara); Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Ardrossan). Ireland: Cork (Bantry Bay, Youghal); Waterford (Dungarvan); Dublin (Kingstown, Howth); Down (Belfast Lough); Antrim (Larne); Galway (Roundstone); Clare (Miltown Malbay, Kilkee). Channel Islands (Jersey, Guernsey). Common.

Gen. 167. Stenogramme Harv.

S. interrupta Mont. Coasts of Somerset (Minehead); Cornwall (Marazion, Bovisand, Mount Edgcumbe); Devon (Plymouth). Ireland: Cork Harbour; Portaferry, Co. Down. Very rare.

Gen. 168. Gymnogongrus Martius.

G. Griffithsiæ Martius. Coasts of Cornwall (St. Minver, Trevone, Padstow, Mount's Bay, Fowey, Mount Edgcumbe); Devon (Torquay, Paignton, Tor Abbey, Dawlish, Exmouth, Sidmouth); Hants (Isle of Wight); Sussex (Brighton, Eastbourne); Essex (Dovercourt); Suffolk (Felixstowe); Cheshire (New Brighton); Isle of Man. Scotland: Orkney Islands (Odin's Bay, Stronsay). Ireland: Cork (Bantry Bay); Dublin (Balbriggan, Malahide). Channel Islands (Guernsey, Alderney). Rather rare.

G. Norvegicus J. Ag. Coasts of Somerset (Minehead); Cornwall (Mount's Bay, Talland Bay, Looe); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Hants (Isle of Wight); Sussex (Brighton, Hastings); Kent (Dover, Deal); Suffolk (Felixstowe); Durham (Sunderland); Cheshire (Hilbre Island); Isle of Man. Wales: Flints (Rhyl); Glamorgan (Swansea). Scotland: Firth of Forth

(Morrison's Haven); Orkney Islands (Kirkwall); Ayr (Saltcoats). Ireland: Cork (Bantry Bay, Youghal); Wicklow; Antrim; Clare (Miltown Malbay). Channel Islands (Jersey, Guernsey). Rather rare.

G. patens J. Ag. (non *Fucus patens* Good. & Woodw.). Coast of Cornwall (Padstow). Very rare.

Gen. 169. Ahnfeltia Fries.

A. plicata Fries (= *Gymnogongrus plicatus* Kütz.). Coasts of Cornwall, Somerset, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Very common.

Gen. 170. Actinococcus Kütz.

A. subcutaneus Rosenv. (= *A. roseus* Kütz.). Parasitic on *Phyllophora Brodiæi*. Coasts of Cornwall (Falmouth); Devon (Torquay); Northumberland (Whitley, Holy Island, Berwick). Wales: Anglesea. Scotland: Haddington (Dunbar); Elgin (Lossiemouth); Bute (Isle of Cumbrae). Ireland: Galway Bay. Probably to be met with wherever the host-plant is found.

A. aggregatus Schm. Parasitic on *Gymnogongrus Griffithsiæ*. Coasts of Cornwall (Mount's Bay); Devon (Torquay, Sidmouth); Hants (Isle of Wight); Sussex (Brighton); Suffolk (Felixstowe). Probably to be met with wherever the host-plant is found.

A. peltæformis Schm. Parasitic on *Gymnogongrus Norvegicus*. Coasts of Cornwall (Falmouth); Devon (Sidmouth, Torquay); Hants (Isle of Wight); Sussex (Brighton, Hastings); Kent (Deal); Suffolk (Felixstowe). Probably to be met with wherever the host-plant is found.

Gen. 171. Colacolepis Schm.

C. incrustans Schm. Parasitic on *Phyllophora epiphylla*. Coasts of Cornwall (Falmouth); Devon (Torquay); Dorset (Weymouth); Sussex (Bognor); Kent (Deal); Essex (Clacton); Norfolk (Yarmouth); Northumberland (Berwick). Wales. Scotland. Ireland, and the Channel Islands. Probably to be found wherever the host-plant occurs.

Gen. 172. Sterrocolax Schm.

S. decipiens Schm. Parasitic on *Ahnfeltia plicata*. Not uncommon wherever the host-plant is found.

Tribe Callymenieæ Schm.

Gen. 173. Callophyllis Kütz.

C. laciniata Kütz. (= *Rhodymenia laciniata* Grev.). Coasts of Cornwall (St. Minver, Scilly Islands, Portluney, Penzance Lizard, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Exmouth, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Suffolk (Corton near Lowestoft); Norfolk (Yarmouth); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Alnmouth, Holy Island, Berwick). Wales: Anglesea (Puffin Island). Scotland: Haddington (Dunbar, North Berwick); Fife

(Dirleton, Inchkeith, Elie); Forfar (Arbroath); Aberdeen (Peterhead); Moray Firth (Campbeltown); Orkney Islands (Kirkwall); Argyle (Machrihanish Bay. South end, Kintyre); Bute (Arran); Iona, Mull; Ayr (Saltcoats, Ardrossan). Ireland: Cork (Bantry Bay, Youghal); Waterford (Dungarvan); Dublin (Kingstown, Balbriggan); Down (Belfast Lough); Antrim (Larne, Portrush); Clare (Kilkee, Miltown Malbay). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

C. flabellata Crn. Coast of Cornwall (Porth Loo, Scilly Islands). West coast of Ireland (Kilkee, Co. Clare). Very rare.

Gen. 174. Callocolax Schm.

C. neglectus Schm. Parasitic on *Callophyllis laciniata*. Coasts of Cornwall (Falmouth); Devon (Plymouth); Dorset (Weymouth, Swanage); Northumberland (Berwick). Scotland: Argyle (Campbeltown); Bute (Isle of Arran). Ireland: Clare (Kilkee). Probably not uncommon.

Gen. 175. Callymenia J. Ag.

C. reniformis J. Ag. Coasts of Cornwall (Scilly Islands, Marazion, Land's End, Falmouth, Whitsand Bay, Torpoint); Devon (Plymouth, Torquay, Ilfracombe); Hants (Isle of Wight). Scotland: Argyle (Machrihanish Bay); Orkney Islands (Skaill Bay). Ireland: Cork (Bantry Bay); Down (Bangor); Antrim (Glenarm); Londonderry (Mouth of the Ban); Clare (Kilkee, Miltown Malbay); Kerry (Dingle). Channel Islands (Jersey, Guernsey, Alderney). Rare. — *α undulata* J. Ag. Coasts of Cornwall (Scilly Islands) and Devon (Torquay). Very rare. — *β cuneata* J. Ag. Coasts of Cornwall (Falmouth) and the Orkney Islands (Skaill Bay, Papa Westra). Rare. — *γ Ferrarii* J. Ag. Coasts of Devon (Plymouth, Torquay, Ilfracombe) and Orkney Islands (Skaill). Channel Islands (Guernsey). Rare.

C. microphylla J. Ag. (= *Meredithia microphylla* J. Ag. Analecta, p. 74). Coasts of Devon (Ilfracombe), Hants (Isle of Wight), and Carnarvon (Bangor). Very rare.

Family Rhodophyllidaceæ Schm.

Tribe Cystocloniæ Schm.

Gen. 176. Cystoclonium Kütz.

C. purpureum Batt. (= *Fucus purpureus* Huds. Fl. Angl. p. 471 (1762); *F. tuberculatus* Lightfoot, Fl. Scot. ii. p. 926 (1777) (non Huds. Fl. Angl. ed. 2, p. 588 (1778); *F. purpurascens* Huds. *l. c.* ed. 2, ii. p. 589 (1778); *Cystoclonium purpurascens* Kütz.; *Hypnea purpurascens* Harv.). Coasts of Cornwall (Trevone, St. Minver, Mount's Bay, Falmouth, Gerran's Bay); Devon (Plymouth, Torquay, Dawlish, Exmouth, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Worthing, Brighton); Kent (Dover, Deal); Essex (Clacton, Harwich); Suffolk (Felixstowe); Norfolk (Yarmouth, Runton); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Cullercoats, Almouth, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island); Carnarvon (Bangor). Scotland:

Haddington (Dunbar, Longniddry); Edinburgh (Caroline Park, Newhaven); Fife (Inchkeith, Elie, Earlsferry); Forfar (Arbroath); Orkney Islands (Kirkwall Bay); Argyle (Loch Etive, Oban, Loch Goil); Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Ayrheads). Ireland: Generally distributed and abundant. Channel Islands (Jersey, Guernsey, Alderney). Common and abundant on most parts of the British coast. — *β cirrhosa* (J. Ag.). Coasts of Sussex (Worthing); Dorset (Weymouth); Northumberland (Berwick). Ireland: Dublin (Balbriggan). Rather rare.

Gen. 177. Catenella Grev.

C. repens Batt. (= *Fucus repens* Lightfoot, Fl. Scot. ii. p. 961 (1777), e spec. orig. in Herb. Kew.; *F. Opuntia* Gooden. & Woodw. in Linn. Soc. Trans. vol. iii. p. 219 (1797); *Catenella Opuntia* Grev.). Coasts of Somerset (Minehead, Clevedon); Cornwall (St. Michael's Mount, Fowey); Devon (Plymouth, Torbay, Salcombe, Sidmouth); Dorset (Studland); Hants (Isle of Wight); Sussex (Hastings); Kent (Dover); Essex (Estuary of Blackwater, Maldon); Norfolk (Cley); Durham (Seaham, Roker, Marsden); Northumberland (Berwick); Isle of Man; Cheshire (Eastham, Hilbre Island). Wales: Anglesea (Puffin Island); Pembroke (Tenby). Scotland: Haddington (Dunbar, North Berwick, Longniddry); Edinburgh (Musselburgh, Caroline Park); Fife (Inchkeith, Earlsferry, Elie, Kincraig, Pittenweem); Forfar (Arbroath); Kincardine (Bay of Nigg); Orkney Islands (Skaill, Kirkwall); Ross-shire (Kessen Ferry); Argyle (Dunstaffnage); Bute (Isle of Cumbrae); Ayr (Ardrossan). Ireland: Cork (Bantry Bay); Dublin Bay. Channel Islands (Jersey, Guernsey). Not uncommon on the rocky parts of the British Islands.

Gen. 178. Euthora J. Ag.

E. cristata J. Ag. (= *Rhodymenia cristata* Grev.). Coast of Northumberland (Cullercoats, Berwick). Scotland: Haddington (Dunbar); Firth of Forth; Caithness (Wick); Orkney Islands (Elwick Harbour); Shetland Island (Voe of Sound near Lerwick). Very rare.

Tribe Rhodophyllideæ Schm.

Gen. 179. Rhodophyllis Kütz.

R. bifida Kütz. (= *Rhodymenia bifida* Grev.). Coasts of Cornwall (Boscastle, Padstow, Mount's Bay, Falmouth, Talland Bay, Torpoint); Devon (Plymouth, Ilfracombe, Torquay, Budleigh, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Deal); Suffolk (Corton near Lowestoft); Norfolk (Yarmouth); Northumberland (Berwick); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Haddington (North Berwick); Fife (Elie); Orkney Islands (Kirkwall); Argyle (Lismore); Bute (Isles of Arran and Cumbrae); Ayr (Ardrossan, Saltcoats, West Kilbride). Ireland: Cork (Bantry Bay); Wicklow; Down (Belfast Lough); Clare (Malbay, Kilkee). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the southern shores of England, and those of the west, south, and east of Ireland.—*β incrassata* Harv. (var. *latifrons* Holm. & Batt.). Coasts of

Cornwall (Porth Loo, St. Mary and Bryher, Scilly Islands) and Devon (Torquay). Ireland: Antrim (Carrickfergus). Rare.

R. appendiculata J. Ag. (= *Rhodymenia bifida* var. *ciliata* Harv.). Coasts of Cornwall (Pridmouth, Mount's Bay); Devon (Bovisand, Ilfracombe, Torbay); Dorset (Weymouth, Swanage); Sussex (Brighton); Kent (Deal); Orkney Islands (Kirkwall). Ireland: Down (Belfast Lough); Antrim (Carrickfergus). Channel Islands (Jersey, Guernsey). Rare.

Series Rhodymeninæ Schm.

Family Sphærococcaceæ Schm.

Tribe Sphærococceæ Schm.

Gen. 180. Sphærococcus Grev.

S. coronopifolius Grev. Coasts of Cornwall (Scilly Islands, Pridmouth, Penzance, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Isle of Man. Scotland: Moray Firth; Orkney Islands (Kirkwall); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Ardrossan, West Kilbride, Heads of Ayr). Ireland: Cork (Bantry Bay); Down (Belfast Lough); Antrim (Larne); Clare (Miltown Malbay). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the southern shores of England, the south and west of Ireland, and the Channel Islands; very rare elsewhere in Britain.

Tribe Gracilarieæ Schm.

Gen. 181. Gracilaria Grev.

G. confervoides Grev. (= *G. dura* Tellam, non Ag.). Coasts of Cornwall (Padstow, St. Minver, Penzance, Falmouth, Looe); Devon (Plymouth, Torquay, Teignmouth, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton, Eastbourne); Kent (Deal); Essex (Harwich); Suffolk (Corton near Lowestoft); Norfolk (Runton); Northumberland (Alnmouth, Bamborough, Berwick); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Argyle (Loch Etive); Bute (Cumbrae); Orkney Islands (Skaill), Ireland: Cork (Bantry Bay); Dublin Bay; Antrim (Portrush); Clare (Miltown Malbay, Kilkee). Channel Islands (Jersey, Guernsey, Alderney).—*β procerrima* (Turn.). Coasts of Devon (Sidmouth); Dorset (Weymouth); Anglesea (Holyhead); Bute (Cumbrae). — *γ gracilis* (Turn.) (= *F. gracilis* Stackh.; *Gracilaria divergens* Holm. & Batt. Rev. List, non J. Ag.). Coasts of Devon (Dawlish, Torquay) and Sussex (Brighton). Rare.

G. compressa Grev. Coasts of Cornwall (Penzance); Devon (Dawlish, Exmouth, Sidmouth); Dorset (Weymouth, Studland); Hants (Isle of Wight); Sussex (Brighton). Channel Islands (Jersey). Very rare.

G. multipartita J. Ag. Coasts of Cornwall (Whitsand Bay, Torpoint, Tait's Hill) and Devon (Plymouth, Salcombe, Wembury).

Gen. 182. Calliblepharis Kütz.

C. ciliata Kütz. (= *Rhodymenia ciliata* Grev.). Coasts of Cornwall (Padstow, St. Minver, Mount's Bay, Falmouth, Fowey); Devon (Ilfracombe, Plymouth, Torbay, Dawlish); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Kent (Dover, Deal, Ramsgate); Essex (Clacton, Harwich, Dovercourt); Suffolk (Felixstowe); Norfolk (Yarmouth); Yorks. (Scarborough); Durham (Hartlepool); Cheshire (Hilbre Island); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Argyle (Loch Etive); Iona; Orkney Islands (Elwich Harbour, Shapinsha); Bute (Isles of Cumbrae and Arran). Ireland: Cork (Bantry Bay); Down (Belfast Lough); Galway (Roundstone Bay). Channel Islands (Jersey, Guernsey). Not uncommon on the shores of the south of England, and the south and west of Ireland, and the Channel Islands; rare in Scotland.—*β angusta* Holm. & Batt. Coasts of Essex (Clacton) and Kent (Deal).

C. lanceolata Batt. (= *Fucus lanceolatus* Stackh. in Wither. Bot. Arr. ed. 3, vol. iv. p. 104 (1796), e spec. auth. in Herb. Linn. Soc.; *F. Jubatus* Gooden. & Woodw. in Linn. Soc. Trans. vol. iii. p. 162 (1797); *Rhodymenia Jubata* Grev.). Coasts of Cornwall (Scilly Islands, Mount's Bay, Looe, Fowey); Devon (Plymouth, Ladran Bay, Sidmouth, Torquay, Exmouth, Salcombe); Dorset (Chapman's Pool, Swanage); Hants (Isle of Wight); Norfolk (Yarmouth); Isle of Man. Scotland: Kincardine coast; Orkney Islands (Shapansey, Kirkwall); Dumbarton (Helensburgh); Bute (Isles of Cumbrae and Arran); Ayr (Ballantrae). Ireland: Cork (Bantry Bay); Clare (Miltown Malbay, Kilkee). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the coasts of the south of England and the Channel Islands, and the south and west of Ireland.—*β divaricata* Holm. & Batt. Coasts of Devon and Dorset. Rather rare.—*γ dilatata* Holm. & Batt. Coasts of Cornwall, Devon, and Dorset. Rather rare.

Family Rhodymeniaceæ Schm.

Tribe Rhodymenieæ Schm.

Gen. 183. Rhodymenia J. Ag.

R. Palmetta Grev. f. *typica* (= *Fucus Palmetta* Stackh. Ner. Br. t. 16). Coasts of Cornwall (St. Minver, Mount's Bay, Lizard, Falmouth, Fowey); Devon (Ilfracombe, Plymouth, Torquay, Sidmouth; Dorset (Weymouth); Hants (Isle of Wight); Sussex (Hastings); Kent (Deal). Wales: Anglesea (Puffin Island). Scotland: Orkney Islands (Kirkwall Bay); Bute (Isles of Arran and Cumbrae); Ayr (Portincross, Saltcoats). Ireland: Cork (Bantry Bay); Clare (Kilkee, Miltown Malbay). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the shores of Southern England and the Channel Islands, and the south and west of Ireland. — f. *bifida* (Turn.). South coast of England. Not uncommon.—f. *crassiuscula* (Turn.) (= f. *latifolia* Crn.). Coast of Cornwall (St. Minver, Scilly Islands). — f. *flabelliformis* Kütz. Coasts of Cornwall (Scilly Islands); Devon (Torquay, Sidmouth); Dorset (Weymouth); Kent

(Deal). Ireland: Clare (Kilkee). Rather rare.—f. *divaricata* Kütz. South coast of England. — Var. *β Elisiæ* Chauv. (= *Rhodymenia Nicæensis* Holm. Rev. List, p. 91; *R. Palmetta* var. *Nicæensis* J. Ag.). Coasts of Cornwall (Pridmouth); Devon (Torquay, Sidmouth); Sussex (Hastings); Kent (Deal). Rare.

R. corallicola Ardiss. Flor. Ital. p. 55, pl. ix. Coast of Kent (Deal, Feb. 1900, J. T. Neeve). Very rare.

R. palmata Grev. f. *typica*. Coasts of Somerset, Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Very common.—f. *marginifera* Harv. Coasts of Devon, Dorset, Sussex, &c., and the Orkney Islands. Common. — f. *sarniensis* Grev. Coasts of Dorset (Weymouth), Orkney Islands (Skaill, Loch of Stennis), and the Channel Islands (Jersey, Guernsey). Not uncommon. — f. *simplex* J. Ag. Common.—f. *sobolifera* J. Ag. Coasts of Cornwall (St. Minver); Devon (Torquay). Scotland: Orkney Islands (Loch of Stennis). Ireland: Dublin (Kingstown); Down (Strangford Lough, Portaferry); Antrim (Glenarm); Galway (Arran Island). Channel Islands (Jersey, Guernsey). Rather rare. — f. *laciniata* Holm. & Batt, Coasts of Devon (Torquay); Northumberland (Berwick). Scotland: Orkney Islands (Kirkwall Bay) and Bute (Isle of Arran). Ireland: Galway (Roundstone Bay). Rather rare.

Gen. 184. Cordylecladia J. Ag.

C. erecta J. Ag. (= *Gracilaria erecta* Grev.). Coasts of Cornwall (Falmouth); Devon (Plymouth, Torquay, Dawlish, Exmouth, Sidmouth); Hants (Isle of Wight); Sussex (Brighton, Hastings); Kent (Folkestone). Scotland: Edinburgh (Joppa); Orkney Islands (Kirkwall Bay). Ireland: Down (Bangor); Antrim (north side of Belfast Lough, Port Ballantrae); Galway (Roundstone Bay). Rare.

Gen. 185. Lomentaria Lyngb.

L. articulata Lyngb. (= *Chylocladia articulata* Grev.). Coasts of Cornwall (Scilly Islands, Penzance, Falmouth, St. Minver, Fowey); Devon (Plymouth, Torquay, Dawlish, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Dover, Deal); Norfolk (Cromer); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Lancs. (Walney Island); Cheshire (Hilbre Island, Eastham, New Brighton); Isle of Man. Wales: Anglesea (Puffin Island). Scotland: Haddington (Dunbar, Longniddry); Fife (Largo, Earlsferry, Elie); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Orkney Islands (Skaill); Argyle (Isles of Jura, Iona, Oransay and Canay, Lismore, Loch Creran); Isle of Skye; Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Ardrossan). Ireland: Cork (Bantry Bay); Waterford (Dungarvan Bay); Wicklow; Dublin (Kingstown); Down (Strangford Lough); Antrim coast; Galway (Roundstone Bay). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon.

L. clavellosa Gaill (= *Chrysymenia clavellosa* Harv.). Coasts of Cornwall (Trevone, St. Minver, Mount's Bay, Falmouth, Torpoint); Devon (Plymouth, Torquay, Salcombe, Exmouth, Sidmouth); Dorset (Weymouth, Studland); Hants (Blackgang, I. W.); Sussex (Bognor, Brighton); Kent (Deal); Suffolk (Corton near Lowestoft); Norfolk (Yarmouth); Yorks. (Filey, Whitby); Durham (Sunderland); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Isle of Man. Scotland: Haddington (Dunbar); Edinburgh (Caroline Park); Fife (Inchkeith, Largo, Anstruther); Forfar (Arbroath); Kincardine (Stonehaven); Elgin (Lossiemouth); Orkney Islands; Bute (Isles of Cumbrae, Arran, and Bute); Ayr (Ardrossan); Dumbarton (Helensburgh). Ireland: Cork (Bantry Bay); Dublin (Clontarf, Howth); Antrim (Larne, Portrush); Clare (Kilkee). Channel Islands (Jersey, Guernsey). Not uncommon. — *β sedifolia* Harv. Coasts of Cornwall (Falmouth), Northumberland (Berwick), Elgin (Lossiemouth), and Cork (Bantry Bay). Rather rare.

L. rosea Thur. (= *Chrysymenia rosea* Harv.). Coasts of Cornwall (Boscastle, St. Minver, St. Michael's Mount, Mount Edgcumbe); Devon (Plymouth, Torquay); Kent (Ramsgate); Yorks. (Filey, Scarborough); Northumberland (Berwick). Very rare.— *β orcadensis* Harv. Coast of Orkney (Skaill). Very rare.

Gen. 186. Champia Lamour.

C. parvula Harv. (= *Chylocladia parvula* Hook.). Coasts of Cornwall (St. Minver, Trevone, Mount's Bay, Penzance); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton, Littlehampton); Isle of Man. Scotland: Orkney Islands; Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats). Ireland: Cork (Bantry Bay); Wicklow coast; Antrim (Portrush); Galway (Roundstone Bay); Clare (Miltown Malbay, Kilkee). Channel Islands (Jersey, Guernsey, Alderney). Not uncommon on the southern shores of England and the south-west of Scotland; common on the Irish coast and that of the Channel Islands. — Var. *implexa*. Cornish coast (St. Minver, &c.). Rather rare.

Gen. 187. Chylocladia Grev.

C. kaliformis Hook. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorkshire, Durham, Northumberland, Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Not uncommon.—Var. *β patens* Harv. Coasts of Devon, Sussex, Orkney, Down, and Antrim. Rather rare. — Var. *γ squarrosa* Harv. Coasts of Devon, Dorset, Galway, and the Channel Islands. Rather rare.

C. ovatus Batt. (= *Fucus ovatus* Huds. Fl. Angl. p. 468 (1762); *F. vermicularis* Gmelin, Hist. Fuc. p. 162, tab. 18, fig. 4 (1768); Lightfoot, Fl. Scot. ii. p. 958 (1777); *F. ovalis* Huds. *l. c.* ed. 2, p. 573 (1778); *Chylocladia ovalis* Hook.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Suffolk, Yorkshire, Isle of Man, Orkney Islands (Papa Westra), S.W. Scotland (Isles of Jura,

Dunstaffnage, Dunoon), N., W., and S. coasts of Ireland, and the Channel Islands. Not uncommon.—Var. *β subarticulata* (= *Gastroclonium subarticulatum* Kütz.). Coast of Devon (Sidmouth, Torbay). Very rare.

C. reflexa Lenorm. Coasts of Cornwall (Mount's Bay, Falmouth, St. Minver); Devon (Ilfracombe, Plymouth, Torquay, Exmouth, Sidmouth); Sussex (Brighton). Channel Islands (Guernsey). (Obs.—The Irish locality in Phyc. Br. is incorrect: see Harv. Man. ed. 2, p. 102.)

Tribe Plocamieæ Schm.

Gen. 188. Plocamium Lyngb.

P. coccineum Lyngb. *α angustifrons* Le Jol. and *β latifrons* Le Jol. Common everywhere on the shores of the British Islands.— *γ uncinatum* Ag. Coasts of Devon (Torbay, Sidmouth, Plymouth); Hants (West Cowes); Norfolk (Cromer); Northumberland (Berwick). Scotland: Loch Etive, Isle of Cumbrae. Rare.

Fam. Delesseriaceæ Schm.

Tribe Nitophylleæ Schm.

Gen. 189. Nitophyllum Grev.

N. punctatum Grev. Coasts of Cornwall (Padstow, Mount's Bay, Falmouth, Torpoint); Devon (Plymouth, Torquay); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Norfolk (Cromer); Northumberland (Almouth, Berwick); Cheshire (New Brighton); Isle of Man. Wales (Swansea). Scotland: Haddington (Dunbar, Longniddry); Fife (Elie); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Caithness (Wick); Orkney Islands; Argyle (Lismore); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Ardrossan). Ireland: Cork (Bantry Bay); Antrim (Larne, Cushendall); Galway (Roundstone Bay); Clare (Kilkee, Miltown Malbay). Channel Islands. Not uncommon, though rather local.—Var. *β ocellatum* J. Ag. Cornwall (St. Minver, Penzance); Devon (Plymouth, Ilfracombe, Torbay, Sidmouth); Northumberland (Cullercoats, Whitley, Berwick). Scotland: Banff; Elgin (Forres); Orkney Islands. Ireland (Bantry Bay). Channel Islands. Rare. —Var. *γ crispatum* Harv. Devon (Mt. Batten); Northumberland (Berwick); Orkney Islands (Kirkwall). Ireland (Roundstone, Kilkee). Rare. — Var. *δ Pollexfenii* Harv. (= *N. alliaceum* Tellam, Mar. Alg. Cornw. 1884, p. 336). Cornwall (Torpoint); Orkney Islands (Kirkwall). Very rare.—Var. *ζ fimbriatum* Harv. Orkney Islands; Roundstone Bay. Very rare. — Var. *ζ reniforme* J. Ag. Orkney Islands (Kirkwall). Very rare.

N. Bonnemaisoni Grev. Coasts of Somerset (Minehead); Cornwall (Mount's Bay, Falmouth, Mount Edgcumbe); Devon (Plymouth, Ilfracombe, Torbay, Dartmouth, Sidmouth); Northumberland (Berwick). Scotland: Haddington (Dunbar); Aberdeen (Peterhead); Orkney and Shetland Islands; Bute (Isles of Bute and Cumbrae); Ayr (Fairlie). Ireland: Cork (Bantry, Youghal); Waterford (Tramore); Down (Strangford Lough); Antrim (Larne); Clare (Miltown Malbay, Kilkee). Channel Islands (Jersey). Rare. — Var.

β crassinervia Batt. Scilly Islands; Berwick; Orkney Islands; Kilkee. Very rare.

N. versicolor Harv. Coasts of Somerset (Minehead); Cornwall (Mount's Bay); Devon (Ilfracombe, Plymouth). Ireland (Youghal). Very rare.

N. uncinatum J. Ag. Coasts of Devon (Sidmouth); Dorset (Swanage); Hants (West Cowes); Orkney Islands (Skaill). Ireland (Murlough Bay and Kilkee). Channel Islands. Very rare.

N. venulosum Zan. (= *N. thysanorhizans* Holm.). Coast of Cornwall (Torpoint and Mount Edgcumbe). Very rare.

N. Sandrianum Zan. Coasts of Somerset (Minehead); Devon (Torbay). Very rare.

N. Gmelini Grev. Coasts of Somerset (Minehead); Cornwall (Mount's Bay, Lizard, Falmouth, Torpoint); Devon (Plymouth, Torbay, Teignmouth, Exmouth, Sidmouth, Ilfracombe); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Folkestone, Deal); Norfolk (Cromer). Scotland: Orkney Islands (Skaill); Bute (Cumbrae); Ayr (Ardrossan). Ireland: Cork (Bantry); Dublin (Howth); Antrim (Larne, Murlough Bay); Clare (Kilkee). Channel Islands. Not uncommon on the S. and W. of England, and the N. and W. of Ireland; very rare in Scotland.

N. ramosum Batt. (= *Ulva ramosa* Huds. Fl. Angl. p. 476 (1762); *Fucus crispatus* Huds. *l. c.* ed. 2, p. 580, e spec. auth. in Herb. Kew.; *F. laceratus* Gmel. Hist. Fuc. p. 179, t. 21, fig. 4 (1768); *N. laceratum* Grev.). Common on the coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex (Harwich), Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Wales, Scotland, Ireland, and the Channel Islands.—f. *ciliifera* (Kütz.). Not uncommon.—f. *lobata* (Kütz.) (= f. *latifrons* Crn.). Coasts of Cornwall and Devon. Rather rare.—Var. *β uncinatum* (Grev.) (non *N. uncinatum* J. Ag.). Coasts of Cornwall (St. Minver, Lizard); Devon (Ladran Bay); Dorset (Weymouth); Sussex (Brighton). Scotland (Orkney Islands). Ireland (Kilkee). Rare.—Var. *γ Smithii* (Kütz.). South of England and the Orkney Islands. Not uncommon.

N. reptans Crn. Coasts of Cornwall (Pridmouth, near Fowey); Devon (Sidmouth); Kent (Deal). Scotland (Arran, Cumbrae). Ireland (Dungarvan Bay, Co. Waterford). Rare.

N. Hilliæ Grev. Coasts of Cornwall (Scilly Islands, Mount's Bay, Falmouth, Fowey, Whitsand Bay); Devon, Ilfracombe, Plymouth, Dartmouth, Torbay, Sidmouth); Hants (Isle of Wight). Scotland (Orkney Islands). Ireland: Cork (Bantry Bay); Kerry (Valentia Island); Clare (Miltown Malbay). Channel Islands. Rather rare on the south coast of England and west of Ireland; very rare in Scotland.

N. litteratum J. Ag. Coasts of Cornwall (Scilly Islands); Devon (Torbay). Very rare.

Gen. 190. Gonimophyllum Batt.

G. Buffhami Batt. Coasts of Cornwall (Scilly Islands); Devon (Sidmouth); Dorset (Weymouth, Swanage); Kent (Deal). Ireland (North side of Belfast Lough; Galway). Rare.

Gen. 191. Phycodrys Kütz.

P. rubens Batt. (= *F. rubens* Huds. Fl. Angl. p. 475 (1762); *F. crenulatus* Gmel. Hist. Fuc. p. 184, t. 24, fig. 1 (1768); *F. roseus* Müll. Fl. Dan. t. 652 (1775); *F. sinuosus* Gooden. & Woodw. Linn. Trans. iii. p. 111 (1797); *Delesseria sinuosa* Lamour.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Common. — Var. β *Quercifolia* (Turn.). South of England and Scotland. Rather rare.—Var. γ *lingulata* (J. Ag.). Coast of Argyle (Loch Fyne). Rare.

Tribe Delesserieæ Schm.

Gen. 192. Delesseria Lamour.

D. sanguinea Lamour. (= *Hydrolapathum sanguineum* Stackh.). Coasts of Somerset, Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex (Harwich), Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Wales, Scotland, Ireland, and the Channel Islands. Common.

D. alata Lamour. Common on almost all the British coasts.

D. angustissima Griff. Coasts of Yorkshire (Filey, Scarborough); Durham (Sunderland); Northumberland (Berwick). Scotland: Aberdeen (Peterhead); Elgin (Lossiemouth); Cromarty Firth; Orkney Islands. Ireland: Kingstown, Co. Dublin; coast of Galway. (*Obs.*—This species has also been recorded from Cornwall and Devon, but it is very unlikely to be found there.)

D. ruscifolia Lamour. Coasts of Cornwall (St. Minver, Trevone, Mount's Bay, Falmouth, Fowey, Mount Edgcumbe); Devon (Plymouth, Torbay, Exmouth, Sidmouth, Ilfracombe); Dorset (Weymouth, Portland, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton); Suffolk (Corton, near Lowestoft); Norfolk (Cromer); Durham (Seaham, Sunderland); Northumberland (Whitley, Berwick); Isle of Man. Scotland: Orkney Islands; Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats). Ireland: Cork (Bantry Bay); Wicklow; Clare (Kilkee, Miltown Malbay). Channel Islands. Rather rare.

D. hypoglossum Lamour. α *Woodwardii* Hauck. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Suffolk (Felixstowe, Corton); Norfolk (Yarmouth, Cromer); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Whitley, Alnmouth, Berwick); Isle of Man; Anglesea; Glamorgan (Swansea). Scotland: Edinburgh (Caroline Park, Joppa); Fife (Elie); Forfar (Arbroath); Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Ardrossan). Ireland: Cork (Bantry Bay); Down (Belfast); Antrim (Larne). Channel Islands. Not uncommon on the shores of England, Ireland, and the Channel Islands; rare in Scotland.—Var. β *ovalifolia* J. Ag. Orkney Islands (Skaill). Rare. — Var. γ *glomerata* Chauv. Coasts of Dorset (Weymouth); Orkney (Skaill). —Var. δ *arborescens* J. Ag. Coasts of Cornwall (Falmouth); Devon (Torbay); Orkney Islands (Kirkwall). — Var. ε *crispa* Crn. Cornwall (Falmouth). — Var. ζ *angustifolia* Kütz. Dorset (Weymouth, Swanage); Bute (Cumbrae); Jersey (Grouville Bay). Rare.

Fam. Bonnemaisoniaceæ Schm.

Gen. 193. Bonnemaisonia Ag.

B. asparagoides Ag. Coasts of Cornwall (Scilly Islands, Mount's Bay, Penzance, Falmouth, Looe, Torpoint); Devon (Plymouth, Torbay); Dorset (Swanage); Hants (Isle of Wight); Suffolk (Corton); Norfolk (Yarmouth, Cromer, Sheringham); Durham (Sunderland); Northumberland (Whitley, Alnmouth, Berwick); Isle of Man. Scotland: Haddington (Dunbar); Fife (Elie); Aberdeen (Peterhead); Moray Firth; Orkney Isles (Kirkwall, Skaill); Argyle (Loch Fyne, Machrihanish Bay, and Southend, Kintyre); Bute (Isles of Arran and Cumbrae); Ayr (Saltcoats, Ardrossan). Ireland: Cork (Bantry Bay); Wicklow; Dublin (Kingstown, Howth, Malahide); Down (Donaghadee, Bangor, Belfast); Antrim (Carrickfergus); Clare (Quilty, Miltown Malbay, Kilkee). Channel Islands. Rare. — Var. *β teres* Harv. Wicklow and Kingstown Harbour, Co. Dublin.

B. hamifera Hariot. Coasts of Cornwall (Falmouth); Hants (Shanklin, I. W.); Devon (Torquay, Aug. 1902, E. A. B.). Rare.

Fam. Rhodomelaceæ Schm.

Tribe Rhodomeleæ Schm.

Gen. 194. Bostrychia Mont.

B. scorpioides Mont. Coasts of Cornwall (Fowey); Devon (Plymouth, Trevol, Salcombe, Dartmouth); Dorset (Portland, Weymouth); Sussex (Selsea, Shoreham); Essex (Wivenhoe, Maldon); Cambs (Tydd Marsh); Suffolk (Felixstowe); Norfolk (Yarmouth, Cley). Wales (Point of Ayr, Flints; Dolgelly; Barmouth). Ireland (Port Stewart, Co. Londonderry; Tarbert, Co. Kerry; Baldoyle). Channel Islands (Jersey). Local.

Gen. 195. Rhodomela Ag.

R. subfusca Ag. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Durham, Northumberland, Cheshire, Wales, Somerset, Scotland, Ireland, and the Channel Islands. Common. — Var. *β gracilior* J. Ag. Berwick, Bute, Kirkwall. Rare.—Var. *γ firmior* J. Ag. Torquay, Falmouth, Kirkwall, Jersey. Rare.

R. lycopodioides Ag. Coasts of Cornwall (St. Minver, Falmouth); Norfolk (Cromer); Northumberland (Newbiggen, Alnmouth, Holy Island, Berwick); Cheshire (Eastham); Isle of Man. Scotland: Coasts of Berwickshire, Haddington, Edinburgh, Fife, Forfar, Kincardine, Aberdeen, Banff, Elgin, the Orkney and Shetland Islands, Caithness, Ross, Argyle, Ayr. Ireland: Co. Dublin (Balbriggan); Down (Bangor); Antrim (Larne); Londonderry (Port Stewart). Common on the shores of Scotland and of the north of England and Ireland. — Var. *β laxa* Kjellm. Northumberland (Berwick); Orkney (Kirkwall). Not uncommon.

Gen. 196. Odonthalia Lyngb.

O. dentata Lyngb. Coasts of Yorkshire (Scarborough); Durham (Sunderland); Northumberland (St. Mary's Isle, Cullercoats, Aln-

mouth, Holy Isle, Berwick); Isle of Man. Scotland: Generally distributed. Ireland: Antrim (north side of Belfast Lough, Larne, Giant's Causeway). Common on the shores of Scotland and Northern England and Ireland.

Tribe Laurencieæ Schm.

Gen. 197. Laurencia Lamour.

L. obtusa Lamour. *α genuina* Hauck. Coasts of Cornwall (Mount's Bay, Falmouth); Devon (Plymouth, Torbay, Exmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton, Hastings); Yorks. (Flamborough Head); Durham (Sunderland); Isle of Man. Wales: Glamorgan (Worm's Head). Scotland: Firth of Forth; Orkney Islands; Argyle (Loch Etive, Falls of Lora, Kintyre); Bute (Isles of Arran and Cumbrae); Ayr (Ardrossan, Portincross, Ballantrae); Solway Firth. Ireland: Cork (Bantry); Dublin (Ireland's Eye); Down (Bangor). Channel Islands. Not uncommon.—Var. *crucifera* Hauck. Coast of Dorset (Weymouth, Swanage).—Var. *pyramidata* J. Ag. Cornwall (Scilly Islands); Dorset (Chapman's Pool, Swanage). Rare.

L. cæspitosa Lamour. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Yorks., Durham, Northumberland, Wales (Anglesea), Scotland, Ireland, and the Channel Islands. Common.

L. pinnatifida Lamour. Coasts of Somerset, Cornwall, Devon, Dorset, Hants, Sussex, Kent, Norfolk, Yorks., Durham, Northumberland, Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Common and abundant almost everywhere on the British coasts.—Var. *β osmunda* Harv. and var. *γ litoralis* Harv. Common.

Tribe Amansieæ Schm.

Gen. 198. Halopithys Kütz.

H. incurvus Batt. (= *F. incurvus* Huds. Fl. Angl. p. 470 (1762); *F. pinastroides* Gmel. Hist. Fuc. p. 127 (1768); *Rytiphlæa pinastroides* Ag.). Coasts of Cornwall (Falmouth, Whitsand Bay); Devon (Plymouth, Torquay, Sidmouth, Axmouth, Lyme Regis); Dorset (Weymouth, Swanage); Hants (Isle of Wight, Portsmouth); Sussex (Bognor, Brighton, Hastings); Kent (Deal); Norfolk (Cromer). Channel Islands. Not uncommon on the southern shores of England and those of the Channel Islands.

Tribe Polysiphonieæ Schm.

Gen. 199. Chondria Ag.

C. tenuissima Ag. (= *Laurencia tenuissima* Harv.). Coasts of Cornwall (Falmouth); Devon (Bovisand, Torbay); Dorset (Weymouth, Swanage, Studland); Hants (Isle of Wight); Sussex (Brighton); Isle of Man. Scotland: Bute (Isle of Arran); Ayr (Saltcoats). Ireland: Cork (Ballycotton); coast of Waterford. Channel Islands. Rare.

C. dasyphylla Ag. (= *Laurencia dasyphylla* Grev.). Coasts of Cornwall (Trevone, Mount's Bay, Mount Edgcumbe); Devon (Plymouth, Torquay, Teignmouth, Exmouth, Sidmouth, Dawlish);

Dorset (Portland, Weymouth); Hants (Christchurch, Isle of Wight); Sussex (Brighton); Kent (Dover, Deal); Essex (Harwich); Suffolk (Felixstowe, Corton); Norfolk (Yarmouth, Cromer, Sheringham); Wales (near Swansea). Scotland: Aberdeen (Peterhead); Elgin (Lossiemouth); Orkney Islands (Skaill); Bute (Isles of Arran, Cumbrae, and Bute); Ayr (Ardrossan). Ireland: Generally distributed. Channel Islands.—Var. *β squarrosa*. Devon (Plymouth); Dorset (Weymouth); Sussex (Brighton).

C. cærulescens J. Ag. Coasts of Sussex (Hastings); Suffolk (Felixstowe). Rare.

Gen. 200. Polysiphonia Grev.

P. macrocarpa Harv. (= *P. pulvinata* Phyc. Br. and *P. sertularioides* Holm. & Batt. Rev. List). Coasts of Cornwall (Padstow, Mount's Bay, Sennen Cove, Falmouth, Fowey); Devon (Ilfracombe, Plymouth, Torbay); Dorset (Portland, Swanage); Hants (Isle of Wight); Sussex (Brighton); Northumberland (Berwick); Cheshire (Hilbre Island). Wales (Anglesea). Scotland: Orkney Islands (North Ronaldsay); Bute (Isle of Cumbrae); Ayr (Ardrossan, Saltcoats). Ireland: Dublin (Balbriggan); Londonderry (Port Stewart); Clare (Miltown Malbay). Channel Islands. Not uncommon.

P. Rhunensis Thur. Cornwall (Trevone Bay); Devon (Ilfracombe, Plymouth). Rare.

P. fibrata Harv. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Northumberland, Cheshire (Hilbre Island), Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Not uncommon.

P. urceolata Grev. *α typica* J. Ag. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Norfolk, Yorks., Durham, Northumberland, Cheshire (Hilbre Island), Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Common.—Var. *β patens* J. Ag. Cornwall, Devon, Cheshire (Hilbre Island), Northumberland (Alnmouth, Berwick), Orkney Islands, Bute (Isles of Cumbrae and Arran). — Var. *γ formosa* J. Ag. (= *P. formosa* Suhr). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Norfolk, Northumberland. Scotland: Haddington, Edinburgh, Fife, Orkney and Shetland Islands, Bute, Ayr. Ireland: Dublin (Malahide, Clontarf); Down (Strangford Lough, Belfast Lough). Not uncommon. — Var. *δ comosa* J. Ag. (= *P. stricta* Grev.). Devon (Plymouth, Torquay, Sidmouth); Dorset (Studland); Northumberland (Berwick). Not uncommon.

P. divaricata Kütz. Joppa, near Edinburgh; and Murlogh Bay, Co. Antrim. Rare.

P. subulata J. Ag. *β Griffithsiana* J. Ag. (= *P. Griffithsiana* Harv.). Coasts of Devon (Torquay); Dorset (Isle of Portland). Very rare.

P. Richardsoni Hook. Coast of Kirkcudbright (Colvend). Very rare.

P. spinulosa Grev. Coast of Argyle (Appin). Very rare.—Var. *β major* J. Ag. (= *P. Carmichaeliana* Harv.). Coasts of Argyle (Appin); Bute (Little Cumbrae); Orkney (Skaill). Very rare.

P. elongella Harv. Coasts of Cornwall (Padstow, Falmouth, Talland Bay, Torpoint); Devon (Plymouth, Torbay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton); Isle of Man; Anglesea. Scotland: Fife (Elie); Aberdeen (Peterhead); Orkney Islands (Kirkwall Bay); Bute (Arran, Cumbrae); Ayr (Ardrossan, Seamill, Saltcoats); Argyle (Kirn). Ireland: Cork (Bantry); Dublin (Howth, Malahide, Killiney); Antrim (Larne, Belfast Lough). Channel Islands (Jersey). Rather rare, though widely distributed.

P. elongata Grev. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Norfolk, Yorks., Durham, Northumberland, Cheshire (Hilbre Island), Isle of Man, Wales, Scotland, and Ireland. Channel Islands (Jersey). Common. — Var. *β rosea* J. Ag. (= *P. rosea* Grev.; *P. elongata* var. *sanguinolenta* Harv.). Not uncommon in spring.—Var. *γ denudata* Grev. Common in autumn and winter.

P. violacea Grev. (incl. *P. Grevillei* Harv.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Durham (Roker), Northumberland (Whitley, Berwick); Isle of Man. Wales (Carnarvon). Scotland: Fife (Elie, Earlsferry); Aberdeen (Peterhead); Orkney Islands; Bute (Arran, Bute, Cumbrae). Ireland: Cork (Bantry); Dublin (Howth); Galway (Roundstone); Kerry (Ferriter's Cove). Channel Islands. Rather rare.—Var. *β allochroa* J. Ag. Cornwall (Falmouth); Devon (Torquay). — Var. *γ subulata* Hauck. Dorset (Portland).

P. fibrillosa Grev. Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay, Sidmouth, Seaton); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Shoreham, Brighton); Norfolk (Cromer); Durham (Roker); Northumberland (Whitley, Berwick); Isle of Man; Anglesea. Scotland: Haddington (Dunbar); Fife (Earlsferry); Kincardine (Stonehaven); Orkney Islands; Argyle (Loch Goil); Bute (Isles of Arran, Bute, and Cumbrae); Ayr (Saltcoats). Ireland: Cork (Bantry); Dublin (Howth); Down (Bangor); Galway (Roundstone); Clare (Miltown Malbay). Channel Islands (Jersey, Alderney). Not uncommon.

P. variegata Zan. Coasts of Cornwall (St. Minver, Torpoint); Devon (Plymouth); Dorset (Weymouth); Hants (Isle of Wight); Sussex (Brighton). Very rare.

P. fœtidissima Cocks (= *P. stuposa* Ralfs in Penzance Nat. Hist. Soc. Proc. 1884, p. 325). Coasts of Cornwall (Newlyn West, Falmouth); Devon (Plymouth); Sussex (Brighton). Very rare.

P. furcellata Harv. *a patula* J. Ag. Coasts of Cornwall (Falmouth): Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Studland); [Norfolk coast, *fide* Geldart]. Ireland: Antrim (Carrickfergus); Galway (Roundstone), Channel Islands (Jersey). Very rare. — Var. *β forcipata* J. Ag. (= *P. turgidula* Holm. fasc. no. 71). Falmouth. Very rare.

P. fastigiata Grev. Very common on the shores of the British Islands wherever its host-plant (*Ascophyllum nodosum*) grows.

P. ceramiæformis Crn. Coasts of Cornwall (Falmouth) and Dorset (Weymouth, Swanage). Very rare.

P. simulans Harv. Coasts of Cornwall (Mount's Bay, Falmouth, Mount Edgcumbe); Devon (Plymouth, Torbay); Dorset (Swanage, Studland). Scotland: Orkney (Skaill); Bute (Arran, Cumbrae). Ireland (Valentia, Kerry). Channel Islands. Rare.

P. opaca Zan. Coast of Guernsey (Petit Port).

P. nigra Batt. (= *Conferva nigra* Huds. Fl. Angl. p. 481, e spec. auth. in Herb. Brit. Mus.; *P. atro-rubescens* Grev.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Norfolk, Yorks., Northumberland. Scotland: Berwicks., Haddington, Edinburgh, Fife, Forfar, Kincardine, Aberdeen, Elgin, Orkney, Bute. Ireland: Generally distributed. Channel Islands. Not uncommon. —Var. β *Agardhiana* (Grev.). Not uncommon.

P. obscura J. Ag. Coasts of Cornwall (Pridmouth, Penzance, Mount Edgcumbe), Devon (Ladran Bay, Sidmouth); Dorset (Weymouth). Channel Islands (Jersey, Guernsey). Very rare.

P. nigrescens Grev. var. α *pectinata* J. Ag. et var. β *fucoides* J. Ag. Common almost everywhere on the shores of the British Islands.— Var. γ *senticosa* J. Ag. Coast of Devon. Rather rare. — Var. δ *protensa* J. Ag. (= *P. violacea* Harv. in Hook. Br. Fl. ii. p. 332, non Grev.; *P. purpurascens* Harv. Man. ed. 1, p. 88; *P. atro-purpurea* Moore in Harv. Man. ed. 1, p. 89). Coasts of Devon (Torquay); Sussex (Bognor, Eastbourne); Argyle (Appin); Dublin (Balbriggan); and Belfast Lough. Not uncommon. — Var. ε *affinis* J. Ag. (= *P. affinis* Moore). Coasts of Cornwall (Cawsand Bay); Devon (Torbay); Sussex (Eastbourne); Kent (Ramsgate); Essex (mouth of the R. Deben). Ireland (Carnlough, near Glenarm, and Cushendall, Co. Antrim). Channel Islands. Rather rare.

P. Brodiæi Grev. α *typica* Holm. & Batt. Coasts of Cornwall (Penzance, Falmouth, Torpoint); Devon (Plymouth, Torbay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Folkestone); Northumberland (Whitley, Alnmouth, Berwick); Isle of Man. Scotland: Haddington (Dunbar); Fife (Elie, Earlsferry); Forfar (Arbroath); Aberdeen (Peterhead); Elgin (Forres); Orkney; Bute (Arran, Cumbrae, and Bute); Ayr (Portincross). South and west coasts of Ireland (Roundstone, Malbay, Bantry). Channel Islands. — Var. β *densa* Holm. & Batt. With the type. Not uncommon.

P. subulifera Harv. Coasts of Devon (Torbay); Dorset (Weymouth); Bute (Lamlash, Arran); Antrim (Belfast, Carrickfergus); Galway (Roundstone Bay). Channel Islands (Jersey, Guernsey). Very rare.—Var. β *Templetoni* Harv. Belfast Bay.

P. fruticulosa Spreng. (= *Rytiphlæa fruticulosa* Harv.). Coasts of Cornwall (Trevone, Mount's Bay, Penzance, Falmouth); Devon (Plymouth, Torbay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Cheshire (Hilbre Island); Isles of Man and Anglesea. Scotland: Bute (Isles of Arran and Cumbrae); Ayr (Portincross, Ballantrae). Ireland: Cork (Bantry Bay); Antrim (Portrush); Galway (Roundstone Bay); Clare (Miltown Malbay). Channel Islands. Common on the shores of the south of England, Ireland, and the Channel Islands; rare on those of Scotland and northern England.

Gen. 201. Pterosiphonia Falk.

P. complanata Schm. (= *Rytiphlœa complanata* Harv.). Coasts of Cornwall (St. Minver, Land's End, Falmouth, Whitsand Bay); Devon (Plymouth). Ireland: Cork (Bantry Bay); Clare (Caarush Pt., Miltown Malbay). Very rare.

P. parasitica Schm. (= *Polysiphonia parasitica* Grev.). Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torbay); Hants (Isle of Wight); Yorks. (Filey); Durham (Seaham, Roker); Northumberland (Whitley, Alnmouth, Holy Island, Berwick); Isle of Man. Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Newhaven); Fife (Earlsferry); Forfar (Arbroath); Kincardine (Dunottar Castle); Aberdeen (Peterhead); Banff (Macduff); Orkney (Kirkwall, Skaill); Argyle (Loch Fyne); Bute (Arran, Cumbrae); Ayr (Largs, Ardrossan, Portincross, Saltcoats); Wigtown (Loch Ryan). Ireland: Wicklow (Black Castle); Cork (Bantry); Clare (Kilkee). Rather rare.— Var. *β coralloides* (Kütz.). Berwick. — Var. *γ repens* J. Ag. Plymouth, Berwick, Ardrossan. Rare.

P. pennata Schm. (= *Polysiphonia pennata* J. Ag.). Mrs. Gulson is said to have found this species at Exmouth (*vide* Gifford, Mar. Bot. p. 122).

P. thuyoides Schm. (= *Rytiphlœa thuyoides* Harv.). Coasts of Cornwall (Padstow, St. Minver, Trevone, Mount's Bay, Falmouth); Devon (Ilfracombe, Plymouth, Torquay, Sidmouth); Dorset (Portland, Swanage); Hants (Isle of Wight); Suffolk (Felixstowe); Norfolk (Cromer); Northumberland (St. Mary Island); Cheshire (Hilbre Island); Isle of Man. Scotland: Haddington (Dunbar); Bute (Arran); Ayr (Portincross). Ireland: Dublin (Howth, Balbriggan); Antrim (Portrush); west coast generally. Channel Islands (Jersey, Guernsey). Rather rare.

Gen. 202. Brongniartella Bory.

B. byssoides Bory (= *Polysiphonia byssoides* Grev.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex (Walton), Suffolk (Felixstowe), Norfolk (Yarmouth, Cromer), Yorks. (Scarborough), Northumberland (Cullercoats, Alnmouth, Berwick), Isles of Man and Anglesea. Scotland: Berwicks., Haddington, Edinburgh, Fife, Forfar, Kincardine, Aberdeen, Moray Firth, Orkney, Argyle, Bute, Ayr. Ireland: Cork (Bantry); Clare (Miltown Malbay). Channel Islands. Common on the southern and eastern shores of England and Ireland; rare in Scotland and the west of Ireland.

Tribe Dasyeæ Schm.

Gen. 203. Dasya Ag.

D. corymbifera Crn. (= *D. venusta* Harv.). Coasts of Dorset (Weymouth, Studland) and the Channel Islands (Jersey, Guernsey). Very rare.

D. arbuscula Ag. Coasts of Cornwall (Scilly Islands, Land's End, Lizard, Falmouth, Padstow, Trevone); Devon (Plymouth, Salcombe, Teignmouth); Dorset (Weymouth); Hants (Isle of

Wight); Yorks. (Scarborough); Northumberland (Cullercoats); Isle of Man. Scotland: Caithness (Wick); Orkney; Bute (Isles of Arran and Cumbrae); Ayrshire. Ireland: Cork (Bantry Bay); Wicklow; Dublin (Killiney, Kingstown); Galway (Roundstone); Clare (Miltown Malbay). Channel Islands. Rare.—Var. *cæspitosa* J. Ag. Padstow.

D. ocellata Harv. Coasts of Cornwall (Trevone, St. Minver, Penzance, Falmouth); Devon (Plymouth, Torquay, Teignmouth, Exmouth, Sidmouth, Ilfracombe); Isle of Man. Ireland: Kerry (Smerwick Harbour); Wicklow (Black Castle); Dublin (Balbriggan). Very local.

D. punicea Menegh. (incl. *D. Cattloviæ* Harv.). Coasts of Dorset (Studland), Sussex (Bognor, Brighton), and the Channel Islands (Jersey). Very rare.

Gen. 204. Heterosiphonia Mont.

H. plumosa Batt. (= *Conferva plumosa* Ellis in Phil. Trans. vol. lvii. p. 424, pl. 18, fig. c (1768); Lightfoot, Fl. Scot. ii. p. 996 (1777); *C. coccinea* Huds. Fl. Angl. ed. 2, p. 603 (1778); *Dasya coccinea* Ag.). Abundant on the shores of England, Ireland, and the Channel Islands; more rare in Scotland.—Var. *β tenuior* Batt. (= *Conferva coccinea β tenuior* Dillw.; *D. coccinea β tenuis* J. Ag.; *D. media* Harv. in Herb. Pollexfen). Coasts of Devonshire (Torbay); Orkney (Kirkwall); Argyle (Upper Loch Fyne); Bute (Isles of Arran and Cumbrae); Cork (Bantry). Dredged in 4–10 fathoms water. Rare.—Var. *γ patens* Batt. (= *D. patens* Grev.; *D. coccinea* var. *squarrosa* Harv.). Coasts of Cornwall (Whitsand Bay); Sussex (Brighton); Yorks. (Scarborough); Argyle (Loch Fyne); Galway (Roundstone). Rare.

Fam. Ceramiaceæ Schm.

Tribe Spermothamnieæ Schm.

Gen. 205. Sphondylothamnion Näg.

S. multifidum Näg. (= *Wrangelia multifida* J. Ag.). Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Looe); Devon (Ilfracombe, Plymouth, Torbay, Sidmouth); Dorset (Swanage, Studland); Sussex (Brighton); Isle of Man. Scotland: Bute (Isles of Arran and Cumbrae); Ayr (Ardrossan, Saltcoats). Ireland; Cork (Bantry); Belfast Lough; Clare (Miltown Malbay). Channel Islands. Frequent on the south coast of England and west of Ireland. — Var. *β pilifera* (Ag.). Cornwall (Fowey); Devon (Plymouth, Torquay); Sussex (Brighton). Rare.

Gen. 206. Spermothamnion Aresch.

S. Turneri Aresch. (= *Callithamnion Turneri* Ag.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Yorks., Durham, Northumberland, Isle of Man. Wales. Scotland: Haddington, Edinburgh, Fife, Forfar, Kincardine, Aberdeen, Orkney, Argyle, Bute, Ayr. Ireland generally. Channel Islands. Common. — Var. *monoica* Schm. (= *Callithamnion Turneri* var. *variabile* J. Ag.; var. *repens* Auct.; *S. roseolum* Pringsh.; *S. her-*

maphroditum Auct.). Cornwall (Trevone); Devon (Sidmouth); Sussex (Brighton); Northumberland (Berwick); Cheshire (Hilbre Island); Anglesea. Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Argyle (Loch Etive); Bute (Arran, Cumbrae). Not uncommon on the northern shores of England and Scotland. — Var. γ *sphæricum* Batt. (= *Callithamnion sphæricum* J. Ag.; *Rhodochorton intermedium* Batt., non Kjellm.). Coast of Northumberland (Berwick). Rare

S. strictum Ardiss. (= *S. flabellatum* Holm. & Batt. Rev. List, non Born. ?). Coasts of Sussex (Bognor); Edinburgh (Joppa); Argyle (Loch Etive). Very rare.

S. barbatum Born. (= *Callithamnion barbatum* Ag.; *Antithamnion barbatum* Holm. & Batt.). Coasts of Cornwall (Penzance); Devon (Ilfracombe, Plymouth); Dorset (Weymouth); Fife (Kincraig, Earlsferry); Argyle (Appin). Very rare. — Var. β *mesocarpum* Batt. (= *Callithamnion mesocarpum* Carm.). Cornwall (Falmouth); Sussex (Brighton); Argyle (Appin); Bute (Cumbrae); Antrim (north side of Belfast Lough). Very rare.

S. irregulare Ardiss. Coast of Dorset (Weymouth). Very rare.

Gen. 207. Trailliella Batt.

T. intricata Batt. (= *Callithamnion intricatum* J. Ag.). Coasts of Cornwall (Falmouth); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth); Hants (Isle of Wight).

Gen. 208. Ptilothamnion Thuret.

P. pluma Thur. (= *Callithamnion pluma* Ag.). Coasts of Cornwall (Pridmouth, Mount's Bay, Looe); Devon (Ilfracombe, Plymouth, Sidmouth); Dorset (Weymouth, Swanage); Sussex (Brighton); Norfolk (Cromer). Scotland: Argyle (Appin). Ireland: Cork (Bantry); Clare (Malbay). Channel Islands. Rather rare.

Tribe Griffithsieæ Schm.

Gen. 209. Griffithsia Ag.

G. corallinoides Batt. (= *Conferva corallinoides* L. Sp. Pl. ii. p. 1166 (1753); *Griffithsia corallina* Ag.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex (Dovercourt), Northumberland (Hartley); Isle of Man. Scotland: Edinburgh (Joppa, Newhaven, Leith); Fife (Elie, Earlsferry); Orkney (Kirkwall, &c.); Argyle (Appin, Machrihanish Bay); Bute (Arran, Cumbrae); Ayr (Ardrossan). Ireland: Generally distributed. Channel Islands. Not uncommon.

G. flosculosa Batt. (= *Conferva flosculosa* Ellis in Phil. Trans. vol. lvii. p. 425, pl. 18, fig. e (1768); *C. setacea* Huds. Fl. Angl. ed. 2, p. 599 (1778); *Griffithsia setacea* Ag.). Frequent on almost every part of the British coast.

G. Devoniensis Harv. Coasts of Cornwall (Torpoint, Mount Edgcumbe); Devon (Salcombe, Plymouth). Channel Islands (Jersey, Alderney). Very rare.

G. barbata Ag. Coasts of Dorset (Weymouth, Swanage, Studland); Sussex (Brighton); Kent (Folkestone). Channel Islands (Jersey). Very rare.

Gen. 210. Halurus Kütz.

H. equisetifolius Kütz. (*Griffithsia equisetifolia* Ag.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Suffolk (Felixstowe), Norfolk (Yarmouth), Yorks. (Bridlington, Scarborough), North Wales. S.W. Scotland (Arran, Ayrheads). West Ireland (Bantry, Malbay, Kilkee). Channel Islands. Not uncommon. — Var. *β simplicifilum* J. Ag. (= *Griffithsia simplicifilum* Ag.). Isle of Wight (Freshwater); Norfolk (Yarmouth, Cromer); Wicklow (Ardinairy Point, Black Castle). Very rare.

Tribe Monosporeæ Schm.

Gen. 211. Bornetia Thur.

B. secundiflora Thur. (= *Griffithsia secundiflora* J. Ag.). Coasts of Cornwall (Scilly Islands); Devon (Bovisand, Plymouth, Torquay). Channel Islands. Very rare on the English coast; not uncommon on that of the Channel Islands.

Gen. 212. Monospora Solier.

M. pedicellata Sol. (= *Callithamnion pedicellatum* Ag.). Coasts of Cornwall (St. Minver, Scilly Islands, Mount's Bay, Falmouth, Fowey); Devon (Plymouth, Salcombe, Torquay, Sidmouth); Dorset (Weymouth, Swanage, Studland); Hants (Isle of Wight); Sussex (Brighton); Norfolk (Cromer); Cheshire (Hilbre Island); Anglesea; Carnarvon; Pembroke (Milford Haven). Scotland: Orkney; Bute (Arran and Cumbrae); Ayr (Saltcoats, Ardrossan). Ireland: Kerry (Valentia, Ferriter's Cove); Cork (Bantry); Wicklow; Dublin (Howth); Down (Bangor, Portaferry); Antrim (Belfast); Galway (Roundstone); Clare (Kilkee). Channel Islands. Not uncommon on the south coasts of England and Scotland; common in Ireland and the Channel Islands. — Var. *β comosa* Holm. & Batt. Falmouth, Torquay, Sidmouth, Weymouth, Alderney. Rare.

M. clavata J. Ag. Devon (Sidmouth); Sussex (Brighton). Channel Islands (Alderney). Rare.

Gen. 213. Pleonosporium Näg.

P. Borreri Näg. (= *Callithamnion Borreri* Harv.). Coasts of Somerset (Clevedon, Blue Anchor, Minehead); Cornwall (St. Minver, Land's End, Falmouth, Looe); Devon (Ilfracombe, Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage, Studland); Hants (Isle of Wight); Sussex (Brighton); Suffolk (Felixstowe); Norfolk (Yarmouth); Yorks. (near Hull); Cheshire (Hilbre Island, New Brighton); Isle of Man (Douglas); Glamorgan (Swansea). Scotland: Argyle (Falls of Lora); Orkney. East coast of Ireland: Dublin (Clontarf, Howth). Channel Islands (Guernsey). Rare.— Var. *β fasciculatum* Holm. & Batt (= *Callithamnion fasciculatum* Harv.). Devon (Torquay); Norfolk (Yarmouth). Very rare.

Tribe Callithamnieæ Schm.

Gen. 214. Rhodochorton Näg.

R. Brebneri Batt. Parasitic on the fronds of *Glœosiphonia capillaris*. Rennie Rocks, Plymouth. Very rare.

R. membranaceum Magn. Coasts of Devon (Plymouth, Sidmouth); Sussex (Brighton); Northumberland (Cullercoats, Berwick); Cheshire (Hilbre Island); Isle of Man; Anglesea. Scotland: Berwicks. (Burnmouth); Edinburgh (Joppa); Orkney. Ireland: Waterford (Dungarvan Bay). Not uncommon. — Var. *β macroclada* Rosenv. Plymouth, Berwick. Rare.

R. minutum Rke. Dorset (Weymouth). Very rare.

R. Seiriolanum Harv. Gibs. Coast of Anglesea (Puffin Island). Very rare.

R. pallens Hauck. Coast of Devon (Seaton). Very rare.

R. Rothii Näg. (= *Callithamnion Rothii* Lyngb.). Common on most of the rocky parts of the British coasts.

R. parasiticum Batt. (= *R. sparsum* Kjellm.). Coasts of Northumberlend (Berwick); Berwicks. (Burnmouth); Haddington (Dunbar); Fife (Elie); Forfar (Arbroath); Argyle (Loch Etive); Bute (Cumbrae). Not uncommon.

R. floridulum Näg. (= *Callithamnion floridulum* Ag.). Coasts of Cornwall, Devon, Dorset, Hants, Kent, Essex (Dovercourt), Yorks., Durham, Northumberland, Cheshire (Hilbre Island), Isle of Man, Anglesea. Scotland: Haddington, Edinburgh, Fife, Forfar, Kincardine, Aberdeen, Orkney, Argyle, Bute. Ireland: Antrim, Galway, Clare, Kerry. Channel Islands. Not uncommon.

Gen. 215. Callithamnion Lyngb.

C. tenuissimum Kütz. Coasts of Cornwall (Trevone, the Lizard, Falmouth); Devon (Plymouth); Dorset (Studland); Orkney (Kirkwall); Channel Islands (Jersey). Rare.

C. byssoides Arn. Coasts of Cornwall (Mount's Bay, Falmouth, Whitsand Bay); Devon (Plymouth, Salcombe, Dartmouth); Dorset (Swanage, Studland); Hants (Isle of Wight); Sussex (Brighton); Norfolk (Cromer, Runton); Yorks. (Scarborough); Carnarvon. Scotland: Orkney (Kirkwall); Bute (Arran, Cumbrae). Ireland (Strangford Lough, Portaferry, Cork Harbour, Dublin Bay). Channel Islands. Not uncommon.

C. Rabenhorstii Crn. Dorset (Studland). Rare.

C. polyspermum Ag. (incl. *C. Grevillei* Harv. et *C. scopulorum* Traill). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Norfolk, Yorks., Durham, Northumberland, Cheshire (Hilbre Island), Isle of Man, Anglesea, Carnarvon. Scotland: Berwicks., Haddington, Edinburgh, Fife, Forfar, Kincardine, Aberdeen, Elgin, Orkney, Argyle, Bute, Ayr. Ireland: Cork, Wicklow, Dublin, Down, Antrim, Donegal, Galway, Clare, Kerry. Channel Islands. Common.

C. roseum Harv. Cornwall (Scilly Islands, Mount's Bay, Falmouth, Looe); Devon (Plymouth, Torquay); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Brighton); Kent (Folkestone); Essex (Southend); Norfolk (Yarmouth, Cley); Yorks. (Scarborough); Durham (Roker); Northumberland (Berwick); Cheshire (Hilbre Island). Wales (Anglesea, Carnarvon). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Earlsferry); Kincardine (Girdleness); Aberdeen (Peterhead); Orkney (Kirkwall); Bute (Isles of Bute, Arran, and

Cumbrae); Ayr (Ardrossan). Ireland: Generally distributed. Channel Islands. Not uncommon.

C. tripinnatum Ag. Devon (Plymouth, Paignton); Galway (Roundstone). Very rare.

C. Dudresnayi Crn. (= *C. affine* et *C. purpurascens* Harv.). Devon (Plymouth); Northumberland (Berwick); Bute (Isles of Bute and Cumbrae); Edinburgh (Joppa). Rare?

C. Hookeri Ag. (incl. *C. lanosum* et *C. spinosum* Harv.). Coasts of Cornwall (Mount's Bay, Falmouth, Looe, Fowey); Devon (Ilfracombe, Plymouth, Torquay, Sidmouth); Dorset (Weymouth); Hants (Isle of Wight); Sussex (Brighton); Norfolk (Yarmouth); Durham (Roker); Northumberland (Hartley, Bamborough, Alnmouth, Berwick); Cheshire (New Brighton); Isle of Man. Wales (Anglesea). Scotland: Haddington (Dunbar, North Berwick); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Orkney (Skaill); Argyle (Loch Etive); Bute (Arran, Cumbrae). Ireland: Cork (Youghal); Wicklow; Dublin (Killiney, Clontarf, Malahide); Belfast Lough; Clare (Kilkee). Channel Islands. Frequent.

C. Brodiæi Harv. Coasts of Cornwall (Mount's Bay, Penzance, Falmouth); Devon (Plymouth, Torbay); Dorset (Studland); Hants (Isle of Wight); Northumberland (Berwick). Scotland: Fife (Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead, Aberdeen); Elgin (Forres); Bute (Arran, Cumbrae); Ayr (Saltcoats). West coast of Ireland (Kilkee, Miltown Malbay). Rare.

C. fruticulosum J. Ag. Coast of Dorset (Swanage). Very rare.

C. arbuscula Lyngb. Coasts of Hants (Shanklin); Yorks. (Filey); Durham (Seaham); Northumberland (Cullercoats, Whitley, Newbiggen, Alnmouth, Berwick); Isle of Man. Scotland: Haddington (North Berwick, Dunbar); Edinburgh (Joppa); Fife (Elie, Anstruther, St. Andrew's); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead, Aberdeen); Moray Firth; Caithness (Wick); Orkney (Skaill); Bute (Arran); Ayr (Ballantrae). W. Ireland: Mayo (Ballycastle); Clare (Kilkee); Kerry (Dingle); Cork (Bantry). Channel Islands. Common on the shores of northern England and Scotland, and the west of Ireland.

C. tetragonum Ag. *α genuinum* Hauck. Coasts of Cornwall (St. Minver, Scilly Islands, Mount's Bay, Falmouth, Looe); Devon (Ilfracombe, Plymouth, Torquay, Exmouth); Dorset (Portland, Weymouth, Swanage); Hants (Isle of Wight); Yorks. (Scarborough); Isle of Man. Wales (Anglesea). Scotland: Aberdeen (Peterhead); Orkney (Skaill, &c.); Bute (Isles of Arran and Bute); Ayr (Portincross). Ireland: Dublin (Howth); Antrim (Ballycastle); Galway (Roundstone). Channel Islands. Not uncommon. —*β brachiatum* J. Ag. (= *Callithamnion brachiatum* Harv.). Cornwall (St. Minver, Falmouth, Whitsand Bay); Devon (Ilfracombe, Wembury); Dorset (Weymouth, Swanage); Sussex (Brighton); Northumberland (Cullercoats); Isle of Man. Scotland: Orkney (Skaill); Argyle (Appin, Machrihanish Bay); Bute (Cumbrae);

Ayr (Saltcoats). West coast of Ireland and Channel Islands. Frequent.

C. tetricum Ag. Coasts of Somerset (Minehead); Cornwall (Scilly, Mount's Bay, Falmouth, Trevone); Devon (Plymouth, Lynmouth, Exmouth, Sidmouth); Dorset (Swanage); Hants (Isle of Wight); Norfolk (Cromer). Wales (Swansea Bay). Ireland: Cork (Youghal); Dublin (Lambay); Clare (Malbay). Channel Islands. Common on the south coast of England, the south-east and west of Ireland, and the Channel Islands.

C. corymbosum Lyngb. (incl. *C. versicolor* Ag.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex (Harwich), Northumberland (Berwick), Cheshire (Hilbre Island), Isle of Man. Wales (Anglesea). Scotland: Edinburgh (Joppa); Fife (Earlsferry); Aberdeen (Peterhead); Orkney (Kirkwall); Argyle (Loch Etive); Bute (Cumbrae); Ayr (Ardrossan, Girvan). Ireland: Cork (Bantry); Wicklow; Dublin (Clontarf, Malahide); Down (Bangor); Belfast Lough; Galway (Roundstone); Clare (Kilkee). Channel Islands. Not uncommon.

C. granulatum Ag. (= *Callithamnion spongiosum* Harv.). Coasts of Cornwall (Scilly, Land's End, Falmouth, Pridmouth); Devon (Ilfracombe, Plymouth, Salcombe, Torbay); Dorset (Swanage); Hants (Isle of Wight); Northumberland (Berwick); Isle of Man (Douglas). Wales (Anglesea). Scotland: Haddington (Dunbar); Fife (Largs); Forfar (Arbroath); Orknəy; Bute (Arran, Cumbrae); Ayr (Saltcoats, West Kilbride). Ireland: Wicklow; Dublin (Howth, Kingstown Harbour, Killiney); Antrim (Larne); Clare (Kilkee). Channel Islands. Not uncommon.

Gen. 216. Seirospora Harv.

S. Griffithsiana Harv. (= *Callithamnion seirospermum* Griff.). Coasts of Cornwall (Trevone, Whitsand Bay, Torpoint); Devon (Plymouth, Salcombe, Torbay); Dorset (Weymouth, Swanage, Studland); Sussex (Brighton); Cheshire (Hilbre Island); Isle of Man. Scotland: Aberdeen (Peterhead); Cromarty; Orkney (Kirkwall Bay); Bute (Arran). Ireland: Down (Portaferry); Galway (Roundstone). Rare. — *β miniata* Batt. (= *C. seirospermum* var. *miniatum* Crn.). Dorset (Weymouth, Studland).

S. interrupta Schm. (= *Callithamnion interruptum* Ag.). Coasts of Dorset (Swanage, Studland) and Sussex (Brighton). Very rare.

S. hormocarpa Batt. (= *Callithamnion hormocarpum* Holm.; *C. byssoides* f. *seirosporifera* Holm. & Batt.). Coasts of Cornwall (Torpoint); Devon (Bovisand, Plymouth, Wembury); Dorset (Studland). Very rare.

Tribe Compsothamnieæ Schm.

Gen. 217. Compsothamnion Schm.

C. thuyoides Schm. (= *Callithamnion thuyoides* Ag.). Coasts of Cornwall (St. Minver, Flushing Bay, Falmouth, Land's End, Trebetherick, Fowey); Devon (Plymouth, Ilfracombe, Torquay, Sidmouth); Sussex (Brighton); Norfolk (Yarmouth, Cromer); Isle of Man. Wales (Swansea). Scotland (Orkney). Ireland (Wicklow, Portaferry, Roundstone). Channel Islands (Guernsey). Rare.

C. gracillimum Schm. (= *Callithamnion gracillimum* Harv.). Coasts of Cornwall (Falmouth, Torpoint); Devon (Ilfracombe, Plymouth, Torquay, Exmouth). Wales (Beaumaris, Milford Haven). Scotland: Fife (Kincraig, Earlsferry); Bute (Arran and Cumbrae). Ireland (Black Castle, Wicklow). Rare.

Tribe Ptiloteæ Schm.

Gen. 218. Plumaria Stackh.

P. elegans Schm. (= *Ptilota sericea* Harv.). Common all round the shores of the British Islands.

Gen. 219. Ptilota Ag.

P. plumosa Ag. Coasts of Yorkshire (Scarborough, Filey); Durham (Roker, Sunderland, &c.); Northumberland (Cullercoats, Alnmouth, Holy Island, Berwick); Cheshire (Hilbre Island); Isle of Man (Castletown). Wales (Anglesea). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar, North Berwick); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Aberdeen (Peterhead); Elgin (Lossiemouth); Caithness (Wick); Orkney (Kirkwall); Argyle (Loch Etive, Campbeltown); Bute (Cumbrae, Arran); Ayr (Ayrheads). N. & W. Ireland. Very common on the shores of Scotland, northern England, and north and west Ireland. (Obs.—The *P. plumosa* of the old Floras of Cornwall, Devon, Dorset, Hants, Sussex, Kent, and Norfolk must be referred to *Plumaria elegans*, which was formerly regarded as a variety of the present species.)

Tribe Crouanieæ Schm.

Gen. 220. Antithamnion Näg.

A. cruciatum Näg. (= *Callithamnion cruciatum* Ag.). Coasts of Cornwall (Lizard, Looe); Devon (Plymouth, Salcombe, Torquay); Hants (Isle of Wight); Sussex (Brighton); Cheshire (Hilbre Island). Wales (Anglesea, Milford Haven). Scotland: Bute (Arran); Kirkcudbright (Colvend). Ireland: Cork; Ferriter's Cove, Kerry; and coast of Down. Rare. — Var. *β pumilum* (Harv.). Cornwall (Lizard); Dorset (Portland). Ireland (Miltown Malbay). Rare.

A. Plumula Thur. Coasts of Cornwall (Padstow, St. Minver, Mount's Bay, Falmouth, Looe); Devon (Ilfracombe, Plymouth, Salcombe, Torquay, Sidmouth); Hants (Isle of Wight); Sussex (Brighton); Kent (Folkestone); Essex (Estuary of the Orwell); Norfolk (Yarmouth, Cromer); Yorks. (Scarborough); Northumberland (Berwick); Isle of Man. Scotland: Edinburgh (Caroline Park, Joppa); Fife (Elie); Forfar (Dundee, Arbroath); Aberdeen (Peterhead); Orkney (Kirkwall); Bute (Arran, Cumbrae); Ayr (Ardrossan). Ireland: Cork (Bantry); Dublin (Killiney, Clontarf); Antrim (Portrush). Channel Islands. Not uncommon. — Var. *β crispum* J. Ag. Cornwall (St. Minver, Mount's Bay, Falmouth); Devon (Plymouth); Dorset (Weymouth). Channel Islands (Jersey). Rare. — Var. *γ spinescens* Strömf. Northumberland (Berwick).— Var. *δ boreale* Rke. Bute (Arran, Cumbrae); Orkney (Kirkwall). Very rare.

A. floccosum Kleen (= *Callithamnion floccosum* Ag.). Coasts of Fife (Kinghorn); Forfar (Dundee); Kincardine (Cove); Aberdeen (Peterhead, Aberdeen); Orkney (Skaill); Bute (Cumbrae); Ayr (Saltcoats). Very rare.

Gen. 221. Hymenoclonium Batt.

H. serpens Batt. Coast of Devon (Plymouth). Very rare.

Gen. 222. Crouania J. Ag.

C. attenuata J. Ag. Coasts of Cornwall (Mousehole, Penzance, Falmouth); Devon (Plymouth, Salcombe). Channel Islands (Guernsey, Alderney). Very rare.

Tribe Spyridieæ Schm.

Gen. 223. Spyridia Harv.

S. filamentosa Harv. Coasts of Cornwall (Torpoint); Devon (Plymouth, Torquay, Exmouth, Budleigh, Sidmouth); Dorset (Portland, Weymouth); Hants (Isle of Wight, Southampton); Sussex (Brighton). Wales: Holyhead, Beaumaris, Aberfraw. Channel Islands (Jersey). Locally abundant on the south and west coasts of England; unknown on the Scotch and Irish coasts.

Tribe Ceramieæ Lyngb.

Gen. 224. Ceramium Lyngb.

C. gracillimum Harv. Coasts of Cornwall (Penzance); Devon (Plymouth, Torquay); Dorset (Weymouth, Swanage); Sussex (Hastings); Norfolk (Cromer). Ireland (Kilkee). Rare.

C. tenuissimum J. Ag. (= *C. nodosum* Harv.). Coasts of Cornwall (Pridmouth, Falmouth, Looe); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Isle of Wight); Sussex (Bognor, Brighton); Essex (Harwich); Norfolk (Cromer); Yorks. (Scarborough); Cheshire (Hilbre Island); Isle of Man. Wales (Anglesea). Scotland: Bute (Arran, Cumbrae); Ayr (Saltcoats, Troon); Orkney (Kirkwall). Ireland: Cork (Bantry); Dublin (Ireland's Eye, Dublin Bay, Howth); Down (Bangor, Newcastle); Donegal (Rathmullen); Galway (Roundstone). Channel Islands. Locally abundant.—Var. *β arachnoideum* Ag. Jersey. Rare.

C. strictum Harv. Coasts of Cornwall (Trevone, Mount's Bay, Penzance, Falmouth, Pridmouth); Devon (Plymouth, Paignton, Torquay); Dorset (Weymouth, Swanage); Northumberland (Berwick); Cheshire (New Brighton, Hilbre Island); Isle of Man. Wales (Anglesea). Scotland: Haddington (Dunbar); Fife (Kincraig, Earlsferry, Elie, Pittenweem); Bute (Arran, Cumbrae). Ireland: Kerry (Dingle); Galway (Roundstone). Channel Islands. Not uncommon.— Var. *β delicatum* J. Ag. Coasts of Cornwall and Devon. Rare.—Var. *γ zostericola* Le Jol. (= *C. divaricatum* Holm. Fasc. no. 29; *C. pellucidum* Crn.). Dorset (Weymouth); Bute (Arran and Cumbrae); Ayr (Fairlie); Galway (Roundstone). Locally abundant.

C. fastigiatum Harv. Coasts of Cornwall (Torpoint, Mount Edgcumbe); Devon (Plymouth, Torbay, Sidmouth); Sussex

(Brighton); Cheshire (Hilbre Island); Isle of Man; Firth of Forth (Joppa). Rare.

C. diaphanum Roth. Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex (Dovercourt), Suffolk (Felixstowe), Norfolk (Cromer), Yorks., Durham, Northumberland. Scotland: Haddington, Fife, Forfar, Kincardine, Aberdeen, Orkney, Argyle, Bute, Ayr. Ireland. Channel Islands. Not uncommon.

C. Deslongchampsii Chauv. Coasts of Somerset (Blue Anchor, Minehead); Cornwall (Torpoint); Devon (Ilfracombe, Plymouth, Torquay); Sussex (Brighton); Essex (Southend, Harwich); Norfolk (Yarmouth); Yorks. (Scarborough); Durham (Sunderland); Northumberland (Cullercoats, Alnmouth, Berwick); Lancs. (Ulverston); Cheshire (New Brighton, Hilbre Island); Isle of Man. Wales (Anglesea, Llandudno, Swansea). Scotland: Haddington, Edinburgh, Fife, Forfar, Kincardine, Aberdeen, Elgin, Orkney, Argyle, Ayr. Ireland (Dublin Bay, Balbriggan, Belfast Lough). Channel Islands. Not uncommon.

C. circinatum J. Ag. (= *C. decurrens* Harv.). Coasts of Cornwall (Trevone, St. Minver, Whitsand Bay); Devon (Plymouth, Torquay); Sussex (Bognor, Brighton); Cheshire (Hilbre Island); Isle of Man. Wales (Anglesea). Scotland: Fife (Largo); Bute (Arran, Cumbrae); Ayr (Ardrossan); Orkney. Ireland (Malahide). Rather rare.

C. arborescens J. Ag. Coasts of Cornwall (Mount Edgcumbe); Devon (Torquay); Argyle (Dunoon); Bute (Cumbrae); Orkney (Kirkwall). Probably not uncommon.

C. fruticulosum Kütz. Coasts of Devon (Torbay); Dorset (Swanage); Northumberland (Berwick). Rare.

C. Crouanianum J. Ag. Coasts of Cornwall (Falmouth) and Devon (Torquay). Rare.

C. vimineum J. Ag. Devon (Falmouth); Dublin (Balbriggan).

C. tenue J. Ag. Coast of Orkney (Kirkwall).

C. botryocarpum Griff. Coasts of Cornwall (St. Minver, Falmouth); Devon (Plymouth, Torquay); Hants (Isle of Wight); Sussex (Brighton); Yorks. (Scarborough); Durham (Seaham); Northumberland (Berwick); Isle of Man. Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Earlsferry); Forfar (Arbroath); Bute (Arran, Cumbrae); Ayr (Saltcoats, Ardrossan). Ireland and Channel Islands. Not uncommon.

C. rubrum Ag. *α pedicellatum* J. Ag. Common almost everywhere on the British coasts.—Vars. *β fasciculatum* J. Ag. et *γ corymbiferum* J. Ag. Not uncommon on the southern coasts of England and Scotland.

C. secundatum J. Ag. Cornwall (Scilly Islands); Orkney (Skaill); Clare (Kilkee). Rare.

C. pennatum Crn. (= *C. Microcladia* Cocks). Cornwall (Pridmouth, Looe, Constantine Bay); Dorset (Weymouth, Studland); Northumberland (Berwick); Bute (Cumbrae). Rare.

? C. Derbesii Kütz. Coasts of Devon and Antrim.

C. flabelligerum. Coasts of Somerset (Blue Anchor, Minehead, Pentire); Cornwall (Trevone, Padstow. St. Minver, Mount's Bay,

Looe); Devon (Plymouth, Torbay); Dorset (Weymouth); Hants (Isle of Wight); Kent (Folkestone, Dover); Essex (Harwich); Suffolk (Felixstowe); Norfolk (Yarmouth); Northumberland (Whitley, Berwick); Cheshire (Puffin Island); Isle of Man; Lancs (Ulverston). Scotland: Edinburgh (Joppa); Bute (Cumbrae); Ayr (Largs); Ailsa Craig. Ireland (coast of Down). Channel Islands. Not common.

C. echionotum J. Ag. Coasts of Somerset (Minehead); Cornwall (St. Minver, Scilly Islands, Mount's Bay, Falmouth, Looe, Mount Edgcumbe); Devon (Plymouth, Torbay); Dorset (Weymouth, Portland, Swanage); Hants (Isle of Wight); Sussex (Brighton); Isle of Man. Wales (Anglesea). Scotland: Orkney; Bute (Cumbrae); Ayr (Saltcoats). Ireland: Antrim (Larne); Galway (Roundstone); Cork (Youghal). Channel Islands. Not uncommon on the south coast of England and the north and west of Ireland. — Var. *β transcurrens* (= *Acanthoceros transcurrens* Kütz.). Devon (Torbay, Sidmouth); Dorset (Studland).

C. ciliatum Ducluz. Coasts of Cornwall (Trevone, St. Minver, Scilly Islands, Mount's Bay, Falmouth, Fowey); Devon (Ilfracombe, Plymouth, Torbay, Exmouth, Sidmouth); Dorset (Weymouth); Hants (Isle of Wight); Sussex (Brighton); Yorks. (Scarborough); Isle of Man. Wales (Anglesea). Scotland: Edinburgh (Caroline Park); Fife (Elie); Forfar (Dundee); Bute (Arran); Ayr (Saltcoats); Orkney (Rinansey). Ireland: Generally distributed. Channel Islands. Rather rare.

C. acanthonotum Carm. Coasts of Somerset, Cornwall, Devon, Dorset, Hants, Norfolk, Yorks., Durham, Northumberland, Cheshire, Isle of Man, Wales, Scotland, Ireland, and Channel Islands. Common on the rocky parts of the British coasts.

Gen. 225. Microcladia Grev.

M. glandulosa Grev. Coasts of Cornwall (Scilly Islands, Mount's Bay, Falmouth, Pridmouth, Mount Edgcumbe); Devon (Plymouth, Brixham, Paignton, Torquay, Teignmouth, Exmouth, Budleigh); Yorks. (Hompton, near Hull); Orkney Islands. Ireland: Wicklow (Bray); Dublin (Kingstown). Channel Islands (Guernsey). Rare.

Series Cryptoneminæ Schm.

Fam. Gloiosiphoniaceæ Schm.

Gen. 226. Gloiosiphonia Carm.

G. capillaris Carm. Coasts of Cornwall (Mount's Bay, Falmouth, St. Maw's, Mount Edgcumbe); Devon (Plymouth, Wembury, Torbay, Teignmouth. Sidmouth); Kent (Sheerness); Yorks. (Scarborough, Filey); Northumberland (Cullercoats, Whitley, Alnmouth, Berwick); Isle of Man. Wales (Anglesea). Scotland: Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie); Forfar (Arbroath); Kincardine (Cove); Aberdeen (Peterhead); Moray Firth; Orkney (Skaill); Argyle (Loch Etive, Appin, Achnacree); Bute (Arran, Cumbrae); Ayr (Largs, Ardrossan). Ireland: Dublin (Howth, Balbriggan); Antrim (Glenarm); Galway (Roundstone); Cork (Bantry). Channel Islands. Widely distributed, but never abundant.

Fam. Grateloupiaceæ Schm.

Gen. 227. Halymenia Ag.

H. latifolia Crn. Blackhead, Co, Antrim. Very rare ; only obtained by dredging.

Gen. 228. Grateloupia Ag.

G. filicina Ag. Coasts of Somerset (Minehead); Cornwall (Padstow, St. Minver, Mount's Bay, Falmouth, Whitsand Bay); Devon (Ilfracombe, Lynmouth, Torbay, Exmouth, Sidmouth); Suffolk (Felixstowe). Wales (Aberystwith). Channel Islands (Jersey, Guernsey).—Var. *β intermedia* Holm. & Batt. Devon (Torquay, Exmouth). Channel Islands (Guernsey).

G. dichotoma J. Ag. Coasts of Somerset (Minehead); Cornwall (St. Michael's Mount, St. Minver, Trevone, Falmouth, Fowey, Newquay); Devon (Plymouth). Rare.

G. minima Crn. Coast of Devon (Ilfracombe, Torquay). Rare.

Fam. Dumontiaceæ Schm.

Gen. 229. Dumontia Lamour.

D. incrassata Lam. (= *Ulva incrassata* Müll. Fl. Dan. t. 653 (1775), non Huds. Fl. Angl. ed. 2, p. 572; *U. filiformis* Huds. Fl. Angl. ed. 2, p. 570 (1778); *Dumontia filiformis* Grev.). Coasts of Cornwall, Devon, Dorset, Hants, Essex (Blackwater Estuary); Norfolk (Cromer), Yorks., Durham, Northumberland, Cheshire, Isle of Man, Wales, Scotland, Ireland, and the Channel Islands. Common on most parts of the British coasts. — Var. *β crispata*. Coasts of Devon (Torquay); Northumberland (Budle Bay, Berwick). Scotland (Dunbar, Joppa, Leith, Elie, &c.). Not uncommon.

Gen. 230. Dudresnaya Bonnem.

D. verticillata Le Jol. (= *Ulva verticillata* Velley in Wither. Bot. Arr. ed. 3, vol. iv. p. 127 (1796), e spec. orig. in Herb. Kew.; *D. coccinea* Crn.). Coasts of Cornwall (Falmouth, Fowey, Torpoint); Devon (Plymouth, Wembury, Salcombe, Torquay, Exmouth, Sidmouth); Dorset (Weymouth, Swanage, Studland); Sussex (Brighton). Scotland: Haddington (near Dunbar); Orkney (Kirkwall); Bute (Arran and Cumbrae); Ayr (Saltcoats). Ireland (Bantry). Channel Islands (Jersey, Guernsey). Rare.

Gen. 231. Dilsea Stackh.

D. edulis Stackh. (= *Iridæa edulis* Harv.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Norfolk, Yorks., Durham, Northumberland, Isle of Man, Wales, Scotland, Ireland, and Channel Islands. Common.

Fam. Nemastomaceæ Schm.

Tribe Schizymenieæ Schm.

Gen. 232. Calosiphonia Crn.

C. vermicularis Schm. (= *C. Finisterræ* Crn.). Coasts of Dorset (Weymouth) and Channel Islands (Jersey). Very rare.

Gen. 233. Schizymenia J. Ag.

S. Dubyi J. Ag. (= *Kallymenia Dubyi* Harv.). Coasts of Cornwall (Scilly Islands, Mount's Bay, Cape Cornwall, Falmouth); Devon (Plymouth). Ireland (Belfast Lough and Glenarm, Co. Antrim). Channel Islands (Guernsey). Very local.

Gen. 234. Platoma Schm.

P. marginifera J. Ag. (= *Nemastoma marginifera* J. Ag.). Coast of Cornwall (Whitsand Bay, Padstow). Very rare.

Tribe Halarachnieæ Schm.

Gen. 235. Halarachnion Schm.

H. ligulatum Kütz. (= *Halymenia ligulata* Ag. *α genuinum* Hauck). Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Torpoint); Devon (Ilfracombe, Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Hants (Christchurch, Isle of Wight); Sussex (Worthing, Brighton); Suffolk (Corton); Norfolk (Yarmouth, Sheringham); Cheshire (Hilbre Island); Isle of Man. Wales (Anglesea). Scotland: Aberdeen (Peterhead); Banff (Macduff); Orkney (Kirkwall); Argyle (Southend, Kintyre); Bute (Arran and Cumbrae); Ayr (Portincross). Ireland: Cork (Bantry); Clare (Malbay, Kilkee, and south and east coasts). Channel Islands (Jersey, Guernsey). Rare, and mostly confined to the southern shores of England and Ireland.—Var. *β dichotomum* Harv. Padstow, Yarmouth, Jersey. Not uncommon.—Var. *γ latifolium* Harv. Salcombe, Plymouth, Kirkwall, West of Ireland. Rare. — Var. *δ ramantaceum* Harv. Sidmouth, Brighton.—Var. *ε aciculare* Hauck. Sidmouth, Weymouth, Worthing, Jersey, Kirkwall. Rare.

Gen. 236. Furcellaria.

F. fastigiata Lamour. Common almost everywhere on the shores of the British Islands.

Tribe Nemastomeæ Schm.

Gen. 237. Nemastoma J. Ag.

N. Bardii Farlow (= *Helminthocladia Hudsoni* Batt. in Journ. Bot. 1900, p. 377, non J. Ag.). Coast of Northumberland (Cullercoats). Very rare.

Fam. Rhizophyllidaceæ Schm.

Gen. 238. Polyides Ag.

P. rotundus Grev. Common on most parts of the British coasts.

Fam. Squamariaceæ Schm.

Tribe Cruorieæ Schm.

Gen. 239. Rhododiscus.

R. pulcherrimus Crn. Coast of Devon (Plymouth). Very rare; only obtained by dredging.

Gen. 240. Petrocelis J. Ag.

P. cruenta J. Ag. (= *Cruoria pellita* Harv. in Phyc. Br., non Lyngb.). Coasts of Cornwall (St. Minver, Mount's Bay, Falmouth, Fowey, Looe); Devon (Ilfracombe, Torquay); Hants (Isle of Wight); Yorks. (Scarbrough); Northumberland (Berwick); Cheshire (New Brighton, Hilbre Island). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Argyle (Appin, Oban, Lismore, Loch Goil); Bute (Cumbrae); Renfrew (Gourock). West of Ireland: Clare (Malbay); Channel Islands (Guernsey). Not uncommon).

R. Hennedyi Batt. (= *Actinococcus Hennedyi* Harv.). Coasts of Yorkshire (Filey); Northumberland (Alnmouth, Holy Island, Berwick). Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Edinburgh (Joppa); Fife (Elie, Earlsferry); Forfar (Arbroath); Kincardine (Stonehaven); Orkney (Kirkwall). Common on the shores of Scotland and Northern England.

Gen. 241. Cruoria Fries.

C. pellita Lyngb. Coasts of Cornwall (Penzance, St. Michael's Mount, Pridmouth); Northumberland (Berwick). Scotland: Argyle (Loch Goil); Renfrew (Wemyss Bay); Bute (Cumbrae); Ayr (Saltcoats). Rather rare.

C. adhærens J. Ag. Coasts of Northumberland (Newbiggen, Tynemouth, Berwick); Aberdeen (Peterhead, Aberdeen); Dumbarton (Kilcreggan); Antrim (Cushendall); Clare (Kilkee). Not uncommon.

C. rosea Crn. (= *C. stilla* Kuck.). Coast of Devon (Plymouth, Wembury). Very rare, and only obtained by dredging. — Var. *β purpurea* Batt. (= *C. purpurea* Crn.). Devon (Wembury). Very rare.

Tribe Squamarieæ Schm.

Gen. 242. Cruoriopsis Zan.

C. Hauckii Batt. Coast of Devon (Plymouth). Very rare, and only obtained by dredging.

C. gracilis Batt. (= *Plagiospora gracilis* Kuck.; *Cruoriopsis cruciata* Zan.? Batt. in Journ. Bot. Sept. 1896). Coast of Devon (Plymouth). Very rare; only obtained by dredging.

Gen. 243. Cruoriella Crn.

C. Dubyi Schm. (= *Peyssonnelia Dubyi* Crn.). Coasts of Cornwall (Pridmouth, Plymouth); Devon (Torquay, Sidmouth); Essex (Blackwater Estuary); Yorks. (Scarborough); Northumberland (Berwick); Isle of Man. Scotland: Berwicks. (Burnmouth); Haddington (Dunbar); Forfar (Arbroath); Bute (Arran, Cumbrae, Bute). Ireland: Galway (Roundstone). Channel Islands (Alderney, Guernsey). Not uncommon.

Gen. 244. Peyssonnelia Dcne.

P. Rosenvingii Schm. Coasts of Cornwall, Devon (Plymouth, Sidmouth), Dorset (Chapman's Pool), and Northumberland (Berwick). Rare.

P. Harveyana Crn. Coasts of Cornwall (Mousehole, Penzance); Devon (Wembury); Northumberland (Berwick). Very rare.

P. rubra J. Ag. (= *P. Dubyi* Harv. pro parte). Coasts of Devon (Plymouth) and Galway (Birturbui Bay). Very rare; obtained only by dredging.

P. atropurpurea Crn. Coast of Cornwall (East Mousehole, Penzance, Scilly Islands). Channel Islands (Alderney). Very rare.

P. rupestris Crn. Coast of Devon (Plymouth). Very rare; obtained only by dredging.

Fam. Hildebrandtiaceæ Hauck.

Gen. 245. Hildenbrandtia Nardo.

H. prototypus Nardo. Common almost everywhere on the shores of the British Islands. — Var. *β rosea* Kütz. (= *H. rubra* Harv.). Common.

H. Crouani J. Ag. (= *H. rosea* Crn., non Kütz.). Coasts of Devon (Teignmouth) and Northumberland (Berwick). Rare.

Fam. Corallinaceæ Schm.

Gen. 246. Schmitziella Born. & Batt.

S. endophlæa Born. & Batt. Coast of Devon (Torquay); Isle of Man. Wales (Bangor, Anglesea). Ireland: Cork (Calf Island); Dublin (Dalky Sound); Clare (Kilkee and Farriby Bay). Probably not uncommon.

Gen. 247. Choreonema Schm.

C. Thureti Schm. (= *Melobesia Thureti* Born.). Coasts of Cornwall (Lizard); Devon (Sidmouth); Dorset (Swanage); Hants (Isle of Wight); Sussex (Brighton, Worthing). Ireland: Galway (Roundstone). Not uncommon on the south coast of England, and said to be found all round the Irish coast.

Gen. 248. Melobesia Foslie.

M. farinosa Lam. Not uncommon on the coasts of the British Islands.

M. Callithamnioides Falk., non Crn. Coasts of Devon (Plymouth, Torquay); Dorset (Weymouth).

M. Lejolisii Rosen. Coasts of Cornwall (Falmouth); Devon (Plymouth); Dorset (Swanage); Galway (Roundstone); Cork (Bantry Bay).

M. corallinæ Solms. Coasts of Cornwall (St. Minver, Lizard, Looe, Fowey); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth, Swanage); Essex (Harwich, Dovercourt); Northumberland (Berwick). Scotland: Haddington (Dunbar); Bute (Cumbrae); Ayr (Saltcoats). Ireland: Antrim (north side of Belfast Lough). Channel Islands. Not uncommon on the British coasts.

M. zonalis Fosl. (incl. *Hapalidium confervoides* Crn. et *M. myriocarpa* Crn.). Coasts of Devon (Plymouth); Dorset (Weymouth); Isle of Man; Northumberland (Berwick); Aberdeen (Peterhead); Orkney; Bute (Cumbrae). Ireland (Malahide, Dublin Bay). Not uncommon.

Gen. 249. Dermatolithon Fosl.

D. pustulatum Fosl. (= *Melobesia pustulata* Lam. et *M. verrucata* Lam.). Not uncommon on the coasts of the British Islands.

D. macrocarpum Fosl. f. *Laminariæ* Fosl. (= *Melobesia Laminariæ* Crn.). Coasts of Cornwall, Devon, Dorset, Yorks., Northumberland, Haddington, Fife, Forfar, Bute, Ayr, Waterford. Not uncommon.

D. hapalidioides Fosl. (= *Melobesia hapalidioides* Crn. et *M. confinis* Johnst. Irish Nat. 1896?). Coasts of Cornwall (Boscastle); Devon (Torbay, Sidmouth); Northumberland (Berwick); and Ireland? Not uncommon.

D. adplicatum Fosl. Coast of Sussex (Bognor).

Gen. 250. Lithophyllum Fosl.

L. racemus Fosl. Coast of Devon (Falmouth) and west coast of Ireland.—Vars. *compressa* and *eunana* Foslie. West coast of Ireland.

L. dentatum Fosl. f. *Macallana* Fosl. Coast of Galway (Roundstone Bay).

L. incrustans Fosl. Common all round the British coasts.—Var. *Harveyi* Fosl. Common.

L. orbiculatum Fosl. South-west coast of Scotland (Kyles of Bute, Arran, Seamill).

L. Crouani Fosl. Coasts of Northumberland (Berwick) and Bute (Arran). Probably common.

Gen. 251. Lithothamnion Fosl.

L. glaciale Kjellm. (= *L. flabellatum* Batt., non Rosenv.). South-west coast of Scotland: Bute (Port Bannatyne).

L. colliculosum Fosl. and var. *rosea* Batt. Southern Scotland and Western Ireland. Not uncommon.

L. Battersii Fosl. Coast of Bute (Cumbrae).

L. calcareum Aresch. West coasts of England, Scotland, and Ireland.—Vars. *subsimplex* Fosl. and *compressa* Fosl. West of Ireland.

L. Sonderi Hauck. South-west coast of Scotland (Bute, Cumbrae), and east and west of Ireland.

L. lichenoides Fosl. (= *Melobesia lichenoides* Harv.). Coasts of Cornwall, Devon, Dorset, Hants, Isle of Man, west coast of Ireland, and Channel Islands. Rather rare. — Var. *agariciformis* Fosl. (= *Melobesia agariciformis* Harv.). West coast of Ireland (Roundstone).

L. Lenormandi Fosl. f. *typica* Fosl. Not uncommon on the British coasts. — Var. *sublævis* Fosl. Coast of Northumberland (Berwick).

L. Strömfeltii Fosl. "Common in Ireland," Johnston & Hensman.

L. membranaceum Fosl. Not uncommon on the British coasts.

L. corticiforme Fosl. (= *Melobesia corticiformis* Kütz. et *Hapalidium Hildenbrantioides* Crn.). Not uncommon.

Gen. 252. Clathromorphum Fosl.

C. circumscriptum Fosl. "West of Ireland," Johnston & Hensman.

Gen. 253. Phymatolithon Fosl.

P. polymorphum Fosl. (= *Melobesia polymorpha* Harv.). Not uncommon on the British coasts.

P. lævigatum Fosl. Coast of Northumberland (Berwick), and west coast of Ireland. Not common.

Gen. 254. Corallina Lamour.

C. officinalis L. Common almost everywhere on the British coasts. — Var. *β compacta* Batt. (= *C. compacta* Crn. Fl. Finst. p. 151). Coasts of Devon (Torquay, Sidmouth), and Dorset (Portland, Swanage). Rare.

C. elongata Johnst. Br. Spong. et Corall. e spec. auth. in Herb. Batt. (= *C. mediterranea* Aresch.). Coasts of Cornwall (Lizard, Falmouth, St. Michael's Mount, Pridmouth, Fowey). Ireland: Ballydonegan Bay, and Baltimore, Co. Cork. Channel Islands (Jersey). Rare.

C. squamata Ellis. Coasts of Cornwall (Mount's Bay, Lizard, Falmouth, Fowey); Devon (Plymouth, Paignton, Torquay, Sidmouth); Dorset (Swanage); Hants (Isle of Wight). Scotland: Bute (Arran); Ayr (Portincross). Ireland: Cork (Youghal); Clare (Malbay) ("Not uncommon all round the coast," Johnston & Hensman). Channel Islands. Not uncommon on the south coast of England and the Channel Islands.

C. virgata Zan. Coast of Northern Ireland: Bangor, Co. Down. Very rare.

C. rubens Ellis & Solan. (= *Jania rubens* Lam.). Coasts of Cornwall, Devon, Dorset, Hants, Sussex, Kent, Essex, Suffolk, Norfolk, Durham (Roker, Marsden), Northumberland (Whitley), Isle of Man. Wales (Anglesea). Scotland: Fife (Elie); Aberdeen (Peterhead); Orkney (Kirkwall); Argyle (Lismore); Bute (Cumbrae); Ayr (Saltcoats, Girvan, Ballantrae). Ireland: All round the coast. Channel Islands. Common on the southern shores of England, Ireland, and the Channel Islands; rarer in Scotland.— Var. *β corniculata* Hauck (= *Jania corniculata* Lamour.). Coasts of Cornwall (Falmouth, Looe, Fowey); Devon (Plymouth, Torquay, Sidmouth); Dorset (Weymouth); Sussex (Worthing, Brighton); Essex (Dovercourt). Not uncommon on the southern coasts of England, Ireland, and the Channel Islands.

Genera of Doubtful Affinity.

Gen. 255. Porphyrodiscus Batt.

P. simulans Batt. Coast of Northumberland (Berwick). Very rare.

Gen. 256. Hæmatocelis J. Ag.

H. rubens J. Ag. (= *Hæmatophlœa Crouani* Crn., non J. Ag.). Coasts of Cornwall (Trevone Bay, Penzance); Northumberland (Berwick). Very rare.

Gen. 257. Rhododermis Crn.

R. elegans Crn. Coasts of Cornwall (Scilly Islands); Devon (Plymouth, Wembury). — Var. *β polystromatica* Batt. Coasts of

Devon (Plymouth, Sidmouth); Dorset (Chapman's Pool); Sussex (Bognor); Northumberland (Berwick). Rare.

R. parasitica Batt. Coasts of Devon (Plymouth); Northumberland (Berwick); Haddington (Dunbar); Fife (Kincraig); Forfar (Arbroath). Ireland: Antrim coast. Common on the coasts of Scotland, Northern England, and Ireland.

Gen. 258. Rhodophysema Batt.

R. Georgii Batt. Coasts of Cornwall (Scilly Islands); Devon (Torquay); Dorset (Weymouth). Very rare.

Gen. 259. Erythrodermis Batt.

E. Alleni Batt. Coast of Devon (Plymouth). Very rare, and only obtained by dredging.

Excluded Species.

Waifs.

Cystoseira barbata Ag. *Sargassum bacciferum* Ag. *S. vulgare* Ag. *Dasya Mulleri* Ag. *Plocamium biserratum* Dickie. *Hypnæa musciformis* Lam. *Gelidium cartilagineum* Gaill. *Suhria vittata* J. Ag.

Doubtful Species.

Cladophora Gattyæ Harv. *Hæmatocelis fissurata* Crn. (= the basal disc of *Dumontia filiformis* Grev. ?).

Changes of Nomenclature.

Phæophila Floridearum Hauck = *P. dendroides* Batt.
Epicladia Flustræ Rke. = *Endoderma Flustræ* Batt.
Pogotrichum filiforme Rke. = *Litosiphon filiformis* Batt.
Desmotrichum balticum Kütz. = *Punctaria baltica* Batt.
Phycolapathum crispatum Kütz. = *Punctaria crispata* Batt.
Endodictyon infestians Gran. = *Streblonema infestians* Batt.
Ectocarpus virescens Thur. = *E. Mitchellæ* Harv.
Ascocyclus globosus Rke. = *Hecatonema globosum* Batt.
Myrionema Liechtensternii Hauck = *H. Liechtensternii* Batt.
Carpomitra Cabreræ Kütz. = *C. costata* Batt.
Saccorhiza bulbosa De la Pyl. = *S. polyschides* Batt.
Dictyopteris polypodioides Ag. = *D. membranacea* Batt.
Callithamnion lepadicola J. Ag. = *Erythrotrichia Welwitschii* Batt.
Chantransia trifila Buffh. = *Acrochætium trifilum* Batt.
Chantransia corymbifera Thur. = *Acrochætium corymbiferum* Batt.
Nemalion lubricum Duby = *N. elminthoides* Batt.
Gigartina mamillosa J. Ag. = *G. stellata* Batt.
Phyllophora rubens Grev. = *P. epiphylla* Batt.
Cystoclonium purpurascens Kütz. = *C. purpureum* Batt.
Catenella Opuntia Grev. = *C. repens* Batt.
Calliblepharis Jubata Kütz. = *C. lanceolata* Batt.
Chylocladia ovalis Hook. = *C. ovatus* Batt.
Nitophyllum laceratum Grev. = *N. ramosum* Batt.
Delesseria sinuosa Lam. = *Phycodrys rubens* Batt.
Halopithys pinastroides Kütz. = *H. incurvus* Batt.

Polysiphonia atrorubescens Grev. = *P. nigra* Batt.
Dasya coccinea Ag. = *Heterosiphonia plumosa* Batt.
Griffithsia corallina Ag. = *G. corallinoides* Batt.
Griffithsia setacea Ag. = *G. flosculosa* Batt.
Callithamnion hormocarpum Holm. = *Seirospora hormocarpa* Batt.
Dumontia filiformis Grev. = *D. incrassata* Lam.
Dudresnaya coccinea Crn. = *D. verticillata* Le Jol.
Corallina mediterranea Aresch. = *C. elongata* Johnst.

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ERRATA.

P. 25, line 17 trom top, for "Phæospora," read "phlœospora."
P. 72, line 6 from top, for "Flor. Ital. p. 55," read "Florid. Ital. ii. p. 55."

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